

ORTEC[®]

HV Bias/ NIM Power Supplies and Bins

Types of Power Supplies

ORTEC offers two types of power supplies for use with NIM instrumentation: power supplies that provide operating voltages for a detector (more properly called detector bias supplies) and power supplies that provide the necessary operating voltages for electronic instruments.

HV Bias Supplies

Most detectors used with pulse processing instrumentation require a high-voltage bias supply for operation. Care must be taken in the selection of a detector bias supply to ensure that it has sufficient voltage and current ratings for the detector (or detectors) with which it is to be used. The Models 556 and 556H are normally used with photomultiplier tubes, electron multipliers, and similar devices, which require a large amount of current at an extremely stable voltage. The Models 428, 659, 660, and 710 are normally used with semiconductor detectors, which require very little current.

NIM Power Supplies and Bins

ORTEC offers a choice of NIM-standard power supplies and bins to accommodate any instruments manufactured to these standards. All details conform to (and most exceed) the specifications of DOE/ER-0457T. NIM power supplies are available separately or can be combined with an ORTEC NIM bin to form a single operating unit.

All modules built to the NIM-standard are designed to be housed in a NIM bin and receive their power through a standard rear-panel connector. NIM bins are available to accommodate 6 or 12 single-width NIM modules.

NIM Standard

All ORTEC NIM instrumentation conforms to the May 1990 Revision of the NIM standard (formerly TID 20893 (Rev) and NIM/GPIB). Please refer to DOE/ER-0457T, U.S. NIM committee, May 1990; Standard NIM Instrumentation System, NTIS, U.S. Department of Commerce, Springfield, Virginia 22161.

Bias Supply Applications Guide		
Detector Type	Model	Function
Electron Multipliers, Microchannel Plates, Photomultiplier Tubes, Microchannel Plate PMTs, Scintillation Detectors, Geiger-Mueller Tubes, Proportional Counters	556/556H	0 to ± 3 kV, 0 to 10 mA
Ionization Chambers	659	0 to ± 5 kV and 0 to ± 500 V, 100 μ A
	660	Dual 0 to ± 5 kV and 0 to ± 500 V, 100 μ A
	710	Quad 0 to ± 1 kV, 20 μ A
	556/556H	0 to ± 3 kV, 0 to 10 mA
Semiconductor Charged-Particle Detectors	428	Dual 0 to ± 1 kV
	710	Quad 0 to ± 1 kV, 20 μ A
Semiconductor Photon Detectors [Ge and Si(Li)]	659	0 to ± 5 kV and 0 to ± 500 V, 100 μ A
	660	Dual 0 to ± 5 kV and 0 to ± 500 V, 100 μ A
Photodiodes	710	Quad 0 to ± 100 V or 0 to ± 1 kV, 20 μ A

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NIM Bins and Power Supplies Selection Guide									
Model	Function	Module Connectors	Maximum Power (W)	Amperes Available @ Voltage					
				+6	-6	+12	-12	+24	-24
495	Add-on 6 V Power	N/A	36		6 or 6				
4001A	Standard NIM Bin	12	N/A						
4001C	High-Current NIM Bin	12	N/A						
4002A	Bin Power without ± 6 V	N/A	96			2	2	1	1
4002D	Bin Power with ± 6 V	N/A	160	10	10	3	3	1.5	1.5
4002E	Extra-High Bin Power	N/A	300	12	12	4	4	2	2
4002P	Portable Preamp Power	1 (plus 4 to 12 preamps)	48						
4003	Preamp Power Output	(6 preamps)	N/A						
4006	Minibin and Power Supply	6 (plus 2 preamps)	120W	4	4	1.5	1.5	0.75	0.75

Specifications subject to change
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