



The 'HV-M' suffix power packs are small and hermetically sealed enabling adjustable output voltage by means of adjusting the input voltage. Additional features include: wide frequency range of input voltage; i.e. 50 to 500 Hz long life; low ripple characteristics; capable of withstanding vibration and shock; and the output independent of the case so either the positive or negative terminal may be grounded.

Standard line input voltages are 118, 220, 230 and 240 volts at frequencies of 50 to 500 hertz. All items can be modified for other input voltages. See 'How To Order' paragraph for proper selection of part numbers.

**Input:** Voltage standards are 0 to 118V, 220V, 230V and 240V at frequencies from 50 to 500 hertz.

**Output Potentials:** Range from 1000 volts to 100,000 volts. All items can be modified for lower voltages, that is, the 5KV output may be modified to provide 4KV output, etc.

**Output Potential:** Can be varied from 0 rated voltage and load by means of a variable auto transformer.

**Output currents:** Have been standardized for a maximum of 1.5, 5, 10 or 15 milliamperes. Any unit may be used at a lower current than the nameplate rating.

**Ripple:** 1% RMS or 2.75% peak to peak at rated voltage, maximum.

**Design Life:** 40,000 hours at 35°C, 25,000 hours at 65°C, 5,000 hours at 85°C (see note). NOTE: At 85°C the output current is limited to 80% of the nameplate output current rating. "How To Order" paragraph on next page.

**Mounting Position:** Any mounting position can be used except the HV1000-502M, HV750-502M and HV375-103M are designed to operate in an upright position.

**Altitude:** Up to 10,000 feet operating; 50,000 feet non-operating.

**Salt Spray:** Per MIL-QQ-151 for 50 hours.

**Rectifiers:** Are pre-aged long life silicon type, properly selected and used under derated conditions to assure long life.

**Filter Capacitors:** Are special film types of our own manufacture and designed in particular for long life.

**Two Output Terminals:** Are isolated from the container, permitting either terminal to be operated away from ground. CAUTION: The container must be connected to a potential within the range of the POWER PACK, i.e., to some point on the bleeder string if not to a terminal.

*EXCEPTION: The HV750-502M, HV750-152M and HV1000-502M are provided with a single high voltage output terminal. These power packs are normally furnished to deliver a positive output potential relative to ground. If a negative output is desired it can be shipped as such from the factory, Add suffix letter "A".*

**Ambient Temperature Range:** Is minus 55° C to plus 85°C (with limited ratings).

*EXCEPTION: HV375- 103M, HV750-502M and HV1000-502M are limited to an ambient temperature range of 0 to 50°C.*

**Vibration:** Most power packs are capable of withstanding 10-55 CPS with a total excursion of 0.06 inches for two hours in each plane without failure.

*EXCEPTION: Type HV1000-502M, HV750-502M and HV375-103M are designed for bench handling, general laboratory use and for use in equipment not subject to excessive shock and handling.*

**Hermetically Sealed Container Sealing:** Is accomplished with seamed and soldered CP70 type container, and solder seal bushings.

*EXCEPTION: Type HV375- 103M, HV750-502M and HV1000-502M have a neoprene rubber seal between the cover and the container.*

**16. Oil Filled Container:** Prevents corona. The oil is inhibited, degassed and filtered

**Container Finish:** Zinc chromate primer and light green-gray lacquer per MIL-L-7178.

**Terminals:** Are steatite, solder seal type with solder lug or stud terminals.

**Corona:** All power packs with nameplate ratings of 25 kilovolts or more are supplied with aluminum corona spheres for the high voltage terminal(s). This sphere is used to prevent excessive corona discharge and terminal leakage. It is provided with 1/8" diameter holes to accept a miniature banana jack.

**Regulation:** Is given in the power pack listing as approximate output voltage change per milliampere output with rated input voltage at 60 hertz.

**NOTE:** Overload Protection is not included in any Power Pack. If overload protection is required, it must be provided by the user.

#### 'HV-M' POWER PACKS—Variations Available

**OUTPUT MODIFICATION:** Any unit may be modified to a lower DC output voltage at the same or a lower current rating. That is if 3KVDC output at 3 milliamperes with 118V 60 hertz is required, the HV50-502M can be modified by substituting the high voltage transformer to suit the requirements.

**INPUT:** Any unit can also be modified, within limits, for various primary voltages. Primaries may be modified, in most units, from 24 volts to 1000 volts.

**CENTER TAPPED OUTPUT:** All units which have a rated output current of 1.5 or 5 milliamperes may be modified to produce half voltage output, both positive and negative, in reference to the container. That is, the HV100-502M may be modified to deliver both positive and negative 5000 volts each at 5 milliamperes.

The reference point is the container, and the part number will be HV100-502MT. The suffix letter 'T' indicates the center-tapped output variation.

MAX mA	Model	KV Range	Dim A	Dim B	Dim C	Dim E	Dim G	Dim H	Dim K (Footed)	Dim L	Approx. Regulated Volts	Approx. Weight lbs	Dim K (Spade)
1.5 mA	HV10-152M	0 - 1	3.75	1.75	3.38	0.38	0.91	0.63	4.38	5.25	105	1	4
	HV20-152M	0 - 2	3.75	1.75	3.38	0.38	0.91	0.63	4.38	5.25	140	1	4
	HV50-152M	0 - 5	3.75	2.25	3.38	0.56	2.00	1.25	4.38	5.25	400	2	4
	HV100-152M	0 - 10	3.75	3.19	4.5	1.00	2.88	2.00	4.38	5.25	1500	4	4
	HV150-152M	0 - 15	3.75	3.19	5.5	1.69	2.88	2.00	4.38	5.25	1600	4	4
	HV200-152M	0 - 20	3.75	4.56	5.88	2.13	4.31	3.38	4.38	5.25	1740	9	4
	HV300-152M	0 - 30	3.75	4.56	7.5	3.25	4.31	3.38	4.38	5.25	2100	11	4
	HV500-152M	0 - 50	4.69	6.00	8.5	4.31	4.88	3.38	4.25	5.38	6000	18	*
5 mA	HV750-152M	0 - 75	5.63	7.38	12.13	6.94	6.06	5.52	6.38	7.25	4700	45	*
	HV10-502M	0 - 1	3.75	2.25	3.38	0.38	2.00	1.25	4.38	5.25	60	2	4
	HV20-502M	0 - 2	3.75	2.25	3.38	0.38	2.00	1.25	4.38	5.25	120	2	4
	HV50-502M	0 - 5	3.75	2.25	3.38	0.56	2.00	1.25	4.38	5.25	280	3	4
	HV100-502M	0 - 10	3.75	4.56	5.88	1.00	4.31	3.38	4.38	5.25	500	8	4
	HV150-502M	0 - 15	3.75	4.56	6.13	1.69	4.31	3.38	4.38	5.25	520	11	4
	HV200-502M	0 - 20	3.75	4.56	8.00	2.13	4.31	3.38	4.38	5.25	860	12	4
	HV300-502M	0 - 30	4.69	6.00	8.5	3.31	4.88	4.25	5.38	6.25	1000	22	*
10 mA	HV500-502M	0 - 50	5.63	7.38	12.13	4.31	6.06	5.52	6.38	7.25	1200	40	*
	HV750-502M	0 - 75	11.13	14.06	16.25	7.00	12.52	10.52	10.52	11.58	2200	124	*
	HV1000-502M	0 - 100	16.38	22.88	14.00	9.00	14.52	7.00	22.00	23.00	1000	175	*
	HV10-103M	0 - 1	3.75	2.25	3.38	0.38	2.00	1.25	4.38	5.25	36	2	4
	HV25-103M	0 - 2.5	3.75	2.25	3.75	0.56	2.00	1.25	4.38	5.25	76	3	4
	HV50-103M	0 - 5	3.75	4.56	5.88	1.00	4.31	3.38	4.38	5.25	137	11	4
	HV100-103M	0 - 10	3.75	4.56	8.00	1.00	4.31	3.38	4.38	5.25	265	12	4
	HV150-103M	0 - 15	4.69	6.00	8.5	1.69	4.88	4.25	5.38	6.25	285	20	*
15 mA	HV250-103M	0 - 25	5.63	7.38	12.13	3.31	6.06	5.52	6.38	7.25	300	45	*
	HV375-103M	0 - 37.5	11.13	14.06	16.25	4.75	12.52	10.52	10.52	11.58	1300	124	*
	HV50-153M	0 - 5	2.75	4.56	7.00	1.00	4.31	3.38	4.38	5.25	20	12	4
	HV100-153M	0 - 10	4.69	6.00	8.50	1.00	4.88	4.25	5.38	6.25	50	21	*
	HV150-153M	0 - 15	5.56	7.38	12.13	1.75	6.06	5.52	6.38	7.25	140	45	*
	HV200-153M	0 - 20	5.56	7.38	12.13	2.125	6.06	5.52	6.38	7.25	150	45	*

\*SPADE BOLT MOUNTING NOT AVAILABLE

**How to Order:**

1. Select part number for voltage and current requirements.
2. If the primary voltage is 0 to 118 volts in the frequency range of 50 to 500 Hz, the part number selected in paragraph 1 is proper.
3. If the primary voltage is 220V, 230V and 240V add suffix 'W' to the part number selected in paragraph 1.
4. If a center tapped output is required add suffix 'T' to the part number previously selected. See paragraph on variations of the 'HV-M' Power Packs.

