CHAPTER 1

GENERAL INFORMATION

1.1 INTRODUCTION

The Systron-Donner Model M107 Precision D.C. Voltage Source is an IEEE-488 compatible, ruggedly constructed, stable D.C. voltage source. Maximum ease of operation is combined with accurate performance.

Third-generation improvements in operation and reliability are evidenced through the Model M107. Voltage, range and polarity are easily programmed manually from the front panel, or remotely from the IEEE-488 1975 Interface, standard with the Model M107. Parallel BCD programming is optional in lieu of IEEE-488.

The Model M107 is human engineered with the user in mind. For example, if the 1000V range is selected, the polarity goes to standby automatically to prevent any damage to equipment during programming. For ease in troubleshooting and maintanance, modular construction is used.

D.C. voltage is conveniently selectable by any single digit or in sequence and is displayed on a six-digit LED readout. Accuracy to ±0.002% is true throughout each range of 1, 10, 100 and 1000 volts.

1.2 SPECIFICATIONS

Table 1-1 lists the specifications applicable to the Model M107.

TABLE 1-1 SPECIFICATIONS

Output Ranges:	1V	10V	100V	1000V
Maximum Output Voltage:	0.999999	9.99999	99.9999	999.9999
Increments:	1 μV	10 μV	100 μV	1 mV
Maximum Output Current:	*	50 mA	50 mA	50 mA to 120V 5 mA to 1000V
Output Resistance:	200Ω	.0002Ω	.002Ω	.02Ω to 120V .2Ω to 1000V
Noise (microvolts RMS max.)				
<150 Hz	+15 -25	20	50	200
Wideband	+25 -40	100	150	500
Common Mode Rejection (dB)				
DC	160 160	150	130	110
AC	100 70	70	60	50

Accuracy:	3 months ±0.002% of range after warm-up and stabilization at 23°C, <70% R.H. constant line and load.
Current Limit:	Continuously variable from 0 to maximum output with limit indicator lamp.
Temperature Coefficient of Output:	0.0002% of set ting, +0.0001% of range per °C, between 0°C and 50°C (32°F and 122°F).
Line Regulation:	0.0001% of range, or 10 mV 10 μV, for 10% change from nominal.
Load Regulattion:	0.0001% of range, or 10 μV for change from no load to full load.
Isolation:	The DC output can be floated up to 500 Vdc from the chassis ground.

Settling Time (mSec)				
	<300 <300	<300	<400	<500

*limited by 200Ω impedance.

TABLE 1-1 SPECIFICATIONS (Cont'd)

Warm-up Time:	1 hour to full specifications; 20 minutes with some degradation.
Operating Temperature:	0° to +50°C (122°F).
Relative Humidity:	To 70%.
Input Power:	115/230 Vac ±10% std; 100/200 Vac ±10% optional; 48-440 Hz, 35W 1/2 or 1/4 amp Slo-Blo fuse.
Weight:	26 lbs.
Size:	5-1/4"(H) x 19"(W) Full Rack x 17"(D).

1.3 OPTIONS

Table 1-2 lists the options available for the Model M107.

TABLE 1-2 OPTIONS

OPTION	DESCRIPTION
01, Parallel Interface:	Provides for remote control inputs to establish 6-digit output setting range and polarity.
06, 100/200 Vac:	Provides for operation on 100/200V ±10% ac line power.
07, Local Control:	Local Control only in lieu of IEEE-488

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ADDENDUM

MODEL M107

This addendum involves the options that are available for the Model M107. Refer to Table 1-2 Options on page 1-2. The updated options table below reflects the latest changes. Please note that old option number 06 is now 03; and a new option 06 added.

TABLE 1-2. OPTIONS

OPTION	DESCRIPTION
01, Parallel Interface:	Provides for remote control inputs to establish 6-digit output setting range and polarity.
03 100/200 Vac:	Provides for operation on 100/200V ±10% ac line power.
06, 100 mA Output:	Provides 100 mA maximum current output on 10V and 100V ranges.
07, Local Control:	Local Control only in lieu of IEEE-488.

M107-10-80 MODEL M107 PRECISION D.C. VOLTAGE SOURCE