

INSTRUCTION MANUAL

SECTION I INTRODUCTION

1.1 GENERAL

This manual contains instructions for the installation, operation and maintenance of the Power Designs series of Dual Output Regulated DC Power Sources.

1.2 DESCRIPTION

This Regulated DC Power Source is suitable for general purpose laboratory and industrial applications. Each unit contains two sources in a single case. Each source may be operated independently or combined in a series of parallel arrangement. In addition each output may be operated in either the constant voltage or constant current mode. Transfer from constant voltage to constant current or visa versa is automatic. A current mode lamp indicates when the constant current mode is in operation. Metering is provided by means of two separate digital panel meters. The meters are switch selectable for monitoring the output voltage or current of each source.

The Models TW347D and TW6050D include a front panel adjustable crowbar that protects load circuits against overvoltage conditions.

The Model TW347D features a switch selectable tracking mode of operation. When the front panel switch is set for tracking there is an internal connection between both outputs and source B tracks source A to within 10 millivolts with a single control.

Two ten-turn potentiometers in each source provides voltage and current control with high resolution.

1.3 ELECTRICAL SPECIFICATIONS

MODEL	OUTPUT (each source)		REGULATION		RIPPLE & NOISE	
	VOLTAGE	CURRENT	VOLTAGE	CURRENT	VOLTAGE	CURRENT
TW347D	0-18V 0-16V	0-3A 0-5A	.01%	.02%	2mv P-P	10ma P-P
TW5005D	0-50V	0-.5A	.005%	.06%	1mv P-P	.3ma P-P
TW6050D	0-60V 0-25V 0-15V 0-6V	0-1A 0-2A 0-3A 0-5A	.005%	.02%	1mv P-P	5ma P-P

OPERATING TEMPERATURE RANGE: 0 to 50 degrees C with no derating.

POLARITY: Either the positive or negative output terminal may be grounded or the supply may be "floated" up to 200 volts between any output terminal and chassis. The Model TW347D has an internal connection between the negative terminal of source A and the positive terminal of source B when used in the tracking mode.

METERING: Two front panel digital LED meters in conjunction with meter function switches monitors output voltage or current of each source with an accuracy of 1%.

CONSTANT VOLTAGE MODE

REGULATION: Refer to chart.

RIPPLE AND NOISE: Refer to chart. Value specified at 60 Hz line to 10 MHz.

SOURCE IMPEDANCE: Less than 0.002 ohm at DC; 0.01 ohms at 20 KHz; 1.0 ohms at 1 MHz

RECOVERY TIME: The output voltage will return to within a 15 mV band of the original setting within 50 microseconds for a step load change of 10% to 100% of rating.

STABILITY: Less than 0.01% + 5 Millivolts per 24 hours with constant line, load and ambient temperature after warm-up.

TEMPERATURE COEFFICIENT: Less than 0.03% + 0.5 mV per degree C.

REMOTE VOLTAGE PROGRAMMING: (Approximate value with external resistor)

MODEL	TW5005D	200 OHMS/VOLT
	TW6050D	160 OHMS/VOLT
	TW347D	Not Programmable

CONSTANT CURRENT MODE

REGULATION: See chart.

RIPPLE AND NOISE: See chart.

SOURCE IMPEDANCE: In excess of 100,000 ohms at D.C.

STABILITY: Less than 0.05% + 500 microamperes per 24 hours with constant line, load and ambient temperature.

TEMPERATURE COEFFICIENT: Less than 0.03% + 300 microamperes per degree C.

REMOTE CURRENT PROGRAMMING: (Approximate value with external resistor.)

MODEL	TW5005D	See paragraph 2.7
	TW6050D	400 OHMS/AMPERE
	TW347D	Not Programmable

1.4 MECHANICAL SPECIFICATIONS

MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
TW347D	8.38"	7.75"	13.5"	24 LBS.
TW5005D	8.38"	7.75"	10.5"	18 LBS.
TW6050D	3.50"	19.0"	16.0"	27 LBS.

FINISH: Brushed, anodized natural aluminum front panel with black nomenclature. Models TW347D and TW5005D have a blue vinyl enamel cabinet with carrying handle. Model TW6050C has gray epoxy enamel dust covers.