



## INSTRUCTION MANUAL



# Portable AC DC Power Supply

Model ACDC-20

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**Electrical Test Instruments, LLC.**  
Product Description and Specifications  
**2 kVA ACDC Power Supply Model ACDC-20**

**Overview:**

This is a portable AC and DC power supply intended for circuit breaker charging motors and other general-purpose applications. It will provide variable AC voltages up to 560 VAC at 1.6 kVA and DC voltages up to 480 VDC at 2.0 kVA. It will be in an enclosure approximately 21" x 18" x 12", and weighs 115 lb.

**Basic Description and Operation:**

This instrument is housed in a rugged waterproof case with a hinged lid. The input connection is by way of a recessed three prong male inlet compatible with standard IEC cords. The input is protected and controlled by a 20-amp single pole circuit breaker. When it is turned ON, a dual-deck variable autotransformer (Vernier) is energized, as well as a 0 – 600 volt digital meter. The output arm(s) are protected by a two-pole breaker. The variable output of the Vernier is connected to the primaries of four 700 VA toroidal transformers. The secondaries are connected in series and parallel configuration by means of a multi-deck six position selector switch. The AC output is monitored by the 0 - 600 VAC digital meter. An additional resistor is added in DC mode to read the DC output voltage for open circuit or resistive loads.

The output is controlled by means of a three-position rotary switch. It has maintained, momentary, and center OFF positions. When turned ON, a relay is energized and the Output On lamp is illuminated. The contacts of the relay provide AC voltage directly to one pair of yellow binding posts and through a full-wave bridge rectifier to provide DC to a pair of red and black binding posts.

A 20 kOhm load resistance is connected to the DC output along with a 12-volt Zener diode. This provides a 3 - 12 watt load for the DC output.

This power supply has no filter capacitors on the 240VDC and 480VDC Output modes and is intended to be operated with no load capacitance. The actual AC voltage will drop by as much as 11% under rated load, and the voltmeter will read the actual voltage. The calibration resistor for DC will be set so that the voltmeter reads the expected DC output at no load, but this will drop by 11% or more depending on actual load. Snubbers are connected across the output terminals to reduce noise and high voltage spikes when connected to inductive loads.

The TIMER jacks may be used to start an external timer when the output voltage is applied to the load. These contacts consist of a solid-state relay rated at 0.1 amps and 200 V.

The Remote Jacks may be used to remotely turn output on via solid state relay these are dry contacts.

## Specifications:

Width: 21.5 inches (546 mm)  
Length: 18.5 inches (470 mm)  
Height (bottom): 11.5 inches (292 mm)  
Height (lid): 2.5 inches (64 mm)  
Weight: 115 pounds (52.2 kg)

Input: 105-130 VAC, 50/60 Hz, 2.4 kVA nominal (20 amperes)

Outputs: 0-140 VAC at 16 A continuous (2.0 kVA)  
0-280 VAC at 10 A continuous  
0-560 VAC at 5 A continuous  
0-480 VDC at 4 A continuous (1.6 kVA) (Unfiltered)  
0-240 VDC at 8 A continuous (Unfiltered)  
0-120 VDC at 16 A continuous (Filtered) <2% ripple

Ripple (DC): <2% 120V DC range only

Overloads:	200%	30 seconds ON, 90 seconds OFF	(25% Duty Cycle)
	300%	10 seconds ON, 90 seconds OFF	(10% Duty Cycle)

### Voltmeter Accuracy:

AC: +/- 0.5% of reading +/- 0.5% FS

DC: +/- 2% of reading +/- 1% FS (at rated output current and resistive load)

### Ammeter Accuracy:

AC: +/- 0.15% FS, +/- 6 Counts

DC: +/- 0.15% FS

## WARRANTY

Electrical Test Instruments, LLC, will correct any defect in workmanship or material for two years after date of purchase of any Electrical Test Instruments product. Such corrective measures will be limited to repairing or replacing the unit, at Electrical Test Instruments' option. This limited warranty shall not apply to equipment which has been subjected to negligence, accident or damage by operation, maintenance or storage, or to non-normal use or service. This limited warranty does not cover reimbursements for transportation, removal, installation, repair or replacement, except as may otherwise be specifically agreed to in writing by Electrical Test Instruments. The foregoing is in lieu of all other warranties expressed or implied, and all other obligations or liabilities whether arising under contract, negligence or otherwise, on the part of Electrical Test Instruments. In no event shall Electrical Test Instruments be liable for consequential or special damages, including but not limited to loss of use, loss of income, loss of profit or cost of replacement.