ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Kepco ABC 1500 M* at our website: ***Click HERE***

SECTION I - INTRODUCTION

1-1 SCOPE OF MANUAL

1-2 This manual contains instructions for the installation, operation and maintenance of the ABC-HYBRID power supply group, manufactured by Kepco Inc., Flushing N.Y.

1-3 DESCRIPTION

1-4 The Kepco ABC-HYBRID power supplies are general purpose, highly regulated DC power supplies suited for rack-mounting or bench use. All models in the ABC-HYBRID group are similar in design, featuring vacuum tubes as the series-control or pass-element, with solid state error-signal amplifier and reference circuits. The major differences between the ABC-HYBRID models consist in their individual output ranges (Refer to Table 1-1) and their method of voltage control. While Models ABC 200 and ABC 425 have continuous voltage control by means of a ten-turn rheostat over their full range, Models ABC 1000, ABC 1500 and ABC 2500 are, in addition, equipped with a ten position step switch. The ten-turn rheostat in these models serves as a fine control, interpolating between switch positions and providing high resolution of the output voltage control.

1-5 PROGRAMMING. Rear barrier-strip terminals on all ABC-HYBRID models provide for remote resistance programming of output voltage or current at 1000 ohms per volt. Additional terminals serve for programming connections by external voltage,* the operation of the power supply as a constant current source and other applications (Refer to Section III, Operating Procedures).

*Note: The Model ABC 2500 can be <u>voltage programmed</u> from approximately 850 to 2500 V <u>only</u>. Resistance programming is possible through the entire range.

1-6 CURRENT LIMITING. Current limiting circuitry permits continuous operation into a short circuit on all ABC-HYBRID models. The output returns automatically to the operating voltage when the overload is removed. Fixed current limiting at about 150% of rated maximum output current is provided with Models ABC 1000, ABC 1500 and ABC 2500. Variable current limiting from 25% to 150% of rated maximum output current is featured on Models ABC 200 and ABC 425.

1-7 MECHANICAL. The chassis and supporting frame of the ABC-HYBRID power supplies is contructed of cold rolled, cadmium plated steel. The front panel is made of aluminum, etched and coated. The case is perforated steel, plated and painted.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

MODEL	DC OUTPUT RANGE		RIPPLE RMS	OUTPUT IMPEDANCE OHMS MAX.			MAX. INPUT AMPS
	VOLTS	MA.	MV	DC to 100 CPS	100 CPS to 1 KC	1 KC to 100 KC + μH	At 125 VAC
ABC 200M	0-200	0-100	0.5	1	0.5	2.0+2.0	0.5
ABC 425M	0-425	0-50	0.5	4	0.5	2.0+2.0	0.5
ABC 1000M	0-1000	0-20	1.0	25	1.0	2.0+10.0	0.5
ABC 1500M	0-1500	0-10	1.0	75	1.0	2.0+10.0	0.3
ABC 2500M	0-2500	0-2	1.0	625	1.0	2.0+10.0	0.3

TABLE 1-1, SPECIFICATIONS ABC-HYBRID POWER SUPPLIES

1-8 SPECIFICATIONS, GENERAL

a) INPUT REQUIREMENTS: 105 to 125 V AC or 210 to 250 V AC, 50 to 440 Hz, single phase. Refer to Table 1-1 for AC input current.

b) AMBIENT OPERATING TEMPERATURE: -20°C to +55°C maximum.

c) STORAGE TEMPERATURE: -40°C to +85°C maximum.

d) ISOLATION VOLTAGE: A maximum of 1000 volts (DC or P-P) can be connected between the chassis and either output terminal.

e) AUXILIARY OUTPUT: (Models ABC 200 and ABC 425 only) 6.5 V AC, unregulated, maximum 2 amperes at the rear barrier strip.

1-9 SPECIFICATIONS, VOLTAGE REGULATION MODE.

a) REGULATION:

1) Line: Less than 0.05% or 5 mV whichever is greater, output voltage change, for 105 to 125 V AC or 210 to 250 V AC line variation, at any output voltage within the specified range.

2) Load: Less than 0.05% or 5 mV whichever is greater, output voltage change, for "no load" to "full load" change at any output voltage within the specified range.

b) STABILITY: Less than 0.05% or 50 mV whichever is greater, output voltage change, over a period of 8 hours after warm-up. Measured at constant line voltage, load and ambient temperature.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

c) TEMPERATURE COEFFICIENT: Less than 0.05% per °C. output voltage change.

d) RIPPLE: Refer to Table 1-1 for specifications applicable for individual model.

e) RECOVERY TIME: 50 microseconds.

f) OUTPUT IMPEDANCE: Refer to Table 1-1 for specifications applicable for individual model.

g) OVERSHOOT: No output voltage overshoot from turn-on, turn-off or power failure for output settings above 25% of the maximum rated output voltage. Below 25%, output overshoot is a function of load current and is negligible for load currents in excess of 10% of the maximum rated output current of the power supply.

1-10 SPECIFICATIONS, CURRENT REGULATION MODE (EXTERNAL SENSING)

Note: This specification is valid only when the selected external sensing resistor and current control resistors are high-quality, wire wound units with temperature coefficients of twenty parts per million or better.

a) OUTPUT RANGE: Current regulation from 1 mA to 100% of the maximum rated output current.

b) COMPLIANCE: Voltage compliance range is zero to 100% of maximum rated output voltage. (For any selected output current range, the output voltage is automatically varied throughout the compliance range as required to regulate the output current.

c) REGULATION

1) Line: Less than 0.1% output current change for 105 to 125 V AC line variations, if the specified* voltage sample is maintained across the external sensing resistor.

2) Load: Less than 0.1% output current change for the maximum change in load resistance, if the specified* voltage sample is maintained across the external sensing resistor.

*The external sensing resistor is chosen to produce a 10 volt drop at the maximum operating current.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

d) STABILITY: Less than 0.1% or 10 μA output current change, whichever is greater, over a period of 8 hours after warm-up. Measured at constant line voltage, load and ambient temperature.

e) TEMPERATURE COEFFICIENT: Less than 0.1% output current change per °C.

f) RIPPLE: Less than 0.1% of maximum output current, rms.

1-11 SPECIFICATIONS, PHYSICAL

a) METERS: ABC-HYBRID power supplies suffixed "M", include 2 1/2" meter, 2% full scale accuracy. Models ABC 200M and ABC 425M have a combination voltmeter/ammeter in combination with a meter selector switch at the front panel. Models ABC 1000M, ABC 1500M and ABC 2500M have a voltmeter only.

b) TERMINATIONS AND CONTROLS: Refer to Section II, FIG.'s 2-1 and 2-2 for the location and function of all front and rear terminations and controls.

c) DIMENSIONS: Refer to mechanical outline drawing (FIG. 1-3 for dimensions.

d) STANDARD FINISH:

1) Panel: Etched Aluminum, brushed and coated.

2) Case: Charcoal

1-12 ACCESSORIES

a) RACH MOUNTING ADAPTORS: (5 1/4" high x 19" wide)

1) Kepco Model RA-5 (single unit mounting)

2) Kepco Model RA-4 (two unit, side by side mounting)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP