# KEPCO POWER SUPPLIES

Instrumentation and Modular Power Supplies for System, Bench and the OEM

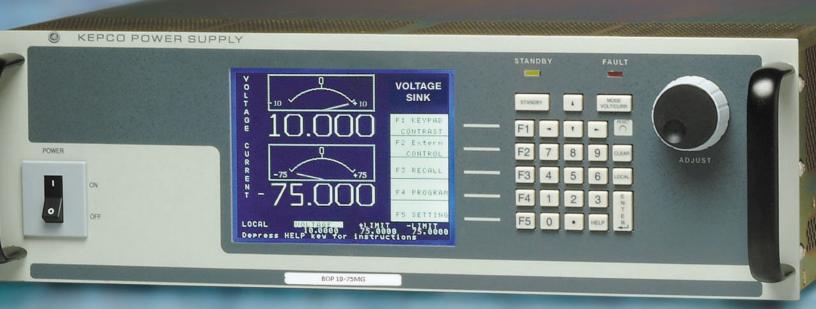
















The Kupferberg Family, owners of Kepco, Inc.: Max, Jesse, Saul, Martin, Seth, Mark and Jack.

Kepco is pleased and proud to present our latest catalog, which presents several new and exciting products along with many "old reliables," all of which will provide a lifetime of reliable service in your power supply application.

From the first Kepco Model 103, to the first all transistorized power supply, to the first fast programmable power supply, to the first bipolar (four-quadrant) power supply all the way to the products presented in this catalog, the founding Kupferberg family and Kepco's many experienced and capable employees have personally maintained a 56-year tradition of quality, innovation and customer service.

It is today's cliché to speak of a company's products and service as "world class." Kepco has been and continues to be committed to the philosophy of designing and manufacturing DC power supplies that meet and even exceed the requirements of the world market, long before "world class" became buzz words.

Our new products, such as the BOP High Power (Bipolar Operational Power Supply), the universal input, Power Factor Corrected RKW series and the low cost, universal input JBW series, are only the latest manifestations of this philosophy. Our network of sales representatives, our experienced internal customer service team, our Web Site (www.kepcopower.com), which features complete product specifications, downloadable service manuals, online ordering and much more and our worldwide network of servicing distributors all insure that Kepco's full support is available both before and after your purchase.

Whether your DC power supply needs are "rack and stack" instrumentation, bench-top, OEM switch-mode, ferroresonant or for a custom Power Assembly configured for your requirements, give us a call or check us out online.

We're ready to help.

Saul Kupferberg 'Vice President Sales/Marketing saulk@kepcopower.com



## **INDEX BY DESIGN GROUP**

NTC, OPS, RAX 1500W, RBX, TLD.....

#### **INSTRUMENTATION POWER SUPPLIES MODULAR POWER SUPPLIES DESIGN GROUP DESIGN GROUP UNIPOLAR POWER SUPPLIES PROGRAMMABLE MODULES** BHK-MG RKW PROGRAMMABLE..... 40 & 200 Watts 300, 600 & 1500 Watts ABC HSM..... 100 Watts 1000 & 1500 Watts PAT..... 20 Watts 50, 100, 250, 500 & 1000 Watts PTR SN-488, SNR 488, SN 488-B, SN 488-D..... 50 Watts ATE-DMG..... 1000 Watts **COMMERCIAL GRADE POWER SUPPLIES** JBW..... 100, 250, 500 & 1000 Watts 10, 15 & 30 Watts RKW OPEN FRAME..... MAT..... 30, 50, 100 & 150 Watts 360, 720 & 1080 Watts FAW..... 15, 25, 50, 100 & 150 Watts 70 Watts KRW..... MSK..... 40 Watts 100 Watts MRW..... MST..... 35, 50 & 65 Watts 200 Watts **INDUSTRIAL GRADE POWER SUPPLIES BIPOLAR POWER SUPPLIES** BOP HIGH POWER..... 30, 60 & 150 Watts 1000 Watts PRM ..... 60, 120, 180, 280, 300 & 450 Watts 100, 200 & 400 Watts BIT..... 50, 100, 175 & 300 Watts BOP-HV..... 350, 750 & 1500 Watts 40 Watts DIGITAL INTERFACES..... DIN-RAIL MOUNTING **SPECIAL PURPOSE POWER SUPPLIES** POWER ASSEMBLY PROGRAM..... HSF..... **MODELS CATALOGED ELSEWHERE** 50, 100, 150 & 350 Watts APH, CC/PCX-MAT, ERX..... 1000 & 1500 Watts FAK, FCP/FMP, MBT..... PRR ..... **MODELS NO LONGER IN** 1000 Watts **STANDARD PRODUCTION** 300, 600, 1500 & 3000 Watts ECM, EFX, EMR, FPD, KFD.....

ACCESSORIES & HARDWARE

## **WHAT'S NEW**



### SERIES ATE-DMG.....

The ATE-DMG are a digitally-controlled version of the 1000 watt ATE-series power supply. A front panel keypad offers local control. External control is by the built-in GPIB. A 2-line LCD displays settings and actual outputs.



### SERIES BHK-MG HALF RACK

BHK-MG are offered in two series, a 40 watt half rack design and a 200 watt full rack product. Both are high voltage models with a new linear MOSFET output stage. A GPIB interface and digital-control keypad are built-in, as is an LCD screen to display settings and actual output values. To retain backwards compatibility with the analog BHK models, the new BHK-MG have analog together with digital control capabilities. The half rack 40 watt models are modern replacements for Kepco's 20 watt APH series high voltage power supplies.



## SERIES BOP HIGH POWER .....

The new BOP High Power models provide 1000 watts of bipolar 4-quadrant power. Like their linear cousins in the 100, 200 & 400 watt sizes, the High Power BOP are fully programmable as sources and sinks. Their switch-mode design offers high efficiency and energy recuperation while sinking maintains that efficiency over all 4 quadrants.



## SERIES HSF 1U.....

The HSF are plug-in power modules for multi-output rack assemblies or redundant paralleling of multiple modules. The new 1U rack can house up to four 50-100 watt modules.



### SERIES HSF 350 WATT.....

The 350 watt HSF plug-in modules rack 3-abreast or can be combined with smaller plug-in modules for do-it-yourself multi-output power racks.

## SERIES JBW.....

JBW are comprised of three groups of affordable power supplies: 10, 15 and 30 watts in a PC card-style package. They offer fixed output voltages from 3.3 to 24V d-c for space and cost-sensitive OEMs. They operate from any a-c mains in the range 85-265 V a-c or a d-c input in the range 110-370V d-c.



#### SERIES RKW PROGRAMMABLE.....

The programmable series RKW are industrial grade single-output power supplies in the 300, 600 & 1500 watt sizes. They provide single d-c outputs from 0-3.3V to 0-48 Volts from a-c mains of 85-265V a-c with Power Factor Correction (PFC). All models feature overvoltage and overcurrent protection, remote on-off and master-slave paralleling with current balance.



### SERIES RKW OPEN FRAME.....

The open frame RKW are industrial grade single-output power supplies in the 30, 50, 100 & 150 watt sizes. They provide single d-c outputs from 3.3V to 48 Volts from a-c mains of 85-265V a-c and except for the 30 watt models are equipped with Power Factor Correction (PFC). They are convection cooled L-chassis construction with optional metal enclosures.



#### DIN-RAIL MOUNTING.....

Many Kepco power supplies may be equipped with clips for mounting in various positions on DIN-Rails.





# INSTRUMENTATION POWER SUPPLIES



PRO	GRAMMING	G CHA	RACTER	RISTICS				
	Design Group	Page Index	Analog Resistance	Analog Operational	Analog Fast	Digital RS 232	Multi-Instr. Serial Bus	Digital IEEE 488
	BHK-MG	15	•	•	•			•
	ABC	19						•
	ATE	22	•	•	•			• (1)
AR	ATE-DMG	28						•
UNIPOLAR	JQE	31	•	•				• (1)
N S	MAT	34				• (1)	•	• (1)
	MPS	36						
	MSK	38	•					
	MST	40				• (4)	•	• (4)
1R	BOP HIGH	44	•	• (6)		•	•	•
BIPOLAR	ВОР	50	•	•	•	• (5)	• (2)	• (3)
BIE	BOP-HV	56	•	•	•			• (1)
Е.	HSF	62	•					
SPECIAL PURPOSE	HSP	67	•					
SPE	PRR	72						
	TBC	74	•					

- (1) Requires the use of an external programming accessory.
- Requires internal card BIT TMA-27. Requires internal card BIT 4882 or BIT 4886.
- Requires plug-in interface MST 488-27.
- Requires internal card BIT 232.
- (6) Programmable by voltage, not isolated.

## Kepco Instrumentation **Power Supplies Characteristic Selection Charts**

The five charts that follow summarize the principal characteristics of Kepco's instrumentation type power supplies.

Tables are included for their programming characteristics (analog and digital), their physical characteristics, electrical output characteristics plus output power and voltage ranges.

The purpose is to help you select an appropriate power supply for your application and to point you toward the correct pages in this catalog where a full description may be found.

The digitally controlled power supplies require some additional explanation as there are many modes of communication (RS 232, IEEE 488.2 and Kepco's single address, multiple instrument serial bus). A number of Kepco accessories translate between buses and link various power supplies to the common host computers used in test systems.



Kepco's facility in Flushing, New York, has received ISO 9001 certificate number 109592 from Lloyd's Register of Quality Assurance.



Model ABC - Bench Style



Model ATE- DMG - Rack Mount

Model BOP - CV/CL, CC/VL

Model BOP High Power - CV/CL, CC/VL



PHYS	SICAL CHAR	RACTE	RISTICS			
	Design Group	Page Index	Bench Style	Wall Mount	Rack Mount	Plug-in Rack
	BHK-MG	15	• (1)		•	
	ABC	19	•		•	
	ATE	22	• (2)		•	
AR	ATE-DMG	28			•	
UNIPOLAR	JQE	31	• (3)		•	
INO	MAT	34			•	•
	MPS	36	•		•	
	MSK	38	•		•	
	MST	40				•
AR	BOP HIGH	44			•	
BIPOLAR	ВОР	50	•		•	
II	BOP-HV	56			•	
. ш	HSF	62				•
SPECIAL PURPOSE	HSP	67			•	•
SPE	PRR	72			•	
	TBC	74		•	•	

- (1) 40W models are half rack/bench style.
- (2) 1/4, 1/2 and 3/4 rack models are rack/bench style.
  (3) 1/4 and 1/2 rack models are rack/bench style.

ELEC	TRICAL OU	TPUT	CHARACTE	RISTICS		
	Design Group	Page Index	CV/CL (1)	CC/VL (1)	CV/CC <sup>(1)</sup> (Autocrossover)	Fast Voltage Slew <sup>(2)</sup>
	BHK-MG	15			•	•
	ABC	19			•	
	ATE	22			•	•
AR	ATE-DMG	28			•	
UNIPOLAR	JQE	31	•			
N	MAT	34			•	
	MPS	36	•			
	MSK	38			•	
	MST	40			•	
AR	BOP HIGH	44	•	•		
BIPOLAR	ВОР	50	•	•		•
BII	BOP-HV	56	•	•		•
Ε.	HSF	62	•			
SPECIAL PURPOSE	HSP	67	•			
SPE	PRR	72	•			
1	ТВС	74	•			

- (1) CV/CL = Constant Voltage/Current Limit.
   CV/CC = Constant Voltage/Constant Current (a design referred to as Automatic Crossover).
   CC/VL = Constant Current/Voltage Limit.
   (2) Fast voltage slewing capability makes possible true constant current operation
- with fast recovery.

POW	ER RANGE	WATT	S						
	Design Group	Page Index	10 	20 5	0 100 I I	200 	500 	1000 20	00
	BHK-MG	15							
	ABC	19							
	ATE	22							
AR	ATE-DMG	28							
UNIPOLAR	JQE	31							
S	MAT	34							
	MPS	36							
	MSK	38							
	MST	40							
AR	BOP HIGH	44							
BIPOLAR	ВОР	50							
B	BOP-HV	56							
, щ	HSF	62							
CIAI	HSP	67							
SPECIAL PURPOSE	PRR	72							
	TBC	74							



Model HSF - 50-350 Watt



Model MST - 200 Watt

VOLTAGE RANGE (0 to) VOLTS												
	Design Group	Page Index		10 	20 <u></u>	50 1	00 2	00 5	00 10 I	)00 20 I	00 I	
	BHK-MG	15										
	ABC	19										
	ATE	22										
UNIPOLAR	ATE-DMG	28										
	JQE	31										
INN	MAT	34										
	MPS	36										
	MSK	38										
	MST	40										
AR	BOP HIGH	44										
BIPOLAR	ВОР	50										
BII	BOP-HV	56										
Е.	HSF	62										
SPECIAL PURPOSE	HSP	67										
	PRR	72										
	ТВС	74										

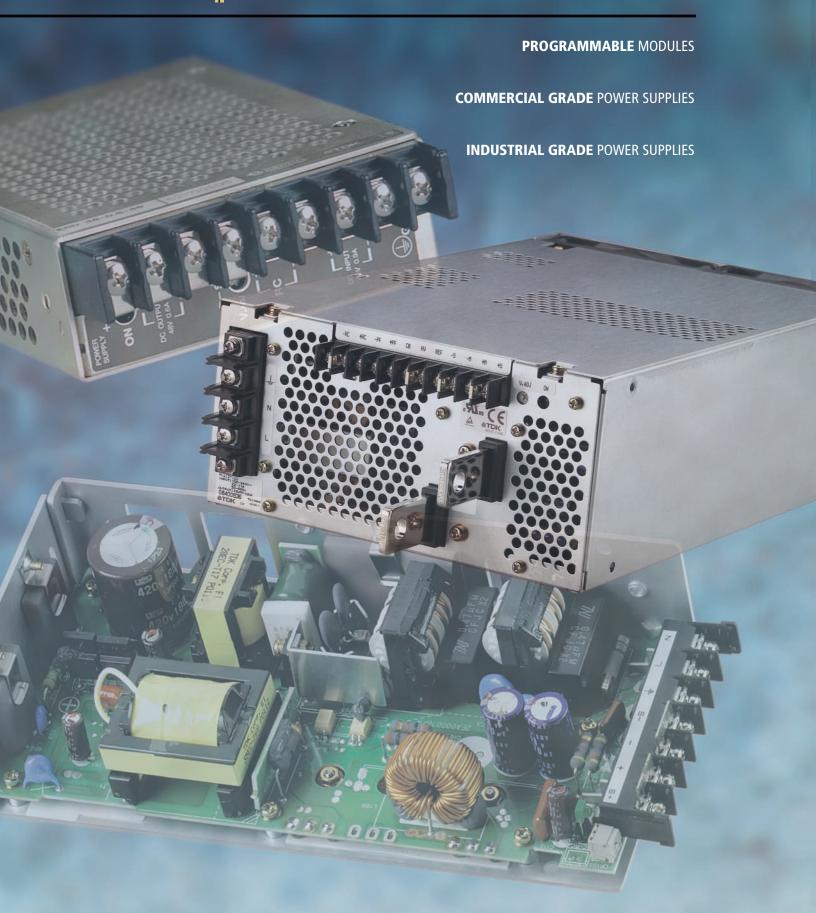
Model BHK-MG - 0-2000V



Model HSP - 3.3~ 48V



# MODULAR POWER SUPPLIES



OUTI	PUT ADJUS	TMEN	T CHARACT	ERISTICS		
	Design Group	Page Index	Fixed Output Not Adjustable	Trim Adjustment	Analog Remote Trim	Programmable
\BLE	RKW PROGRAMMABLE	83		•	•	•
PROGRAMMA MODULES	нѕм	89		•	•	• (3)
OGR/	PAT	93		•	•	•
PR	PTR	93		•	•	•
	JBW	96	•	• (2)		
COMMERCIAL GRADE	RKW OPEN FRAME	99		•	• (4)	
MME	FAW	105		•	• (5)	
00	KRW	108		• (1)		
	MRW	108		• (1)		
7	ERD	113		•	•	
INDUSTRIAL GRADE	PRM	116	•			
VDUS GR.	RAX	121		•	•	
=	RCW	125		•	•	• (3)

- (1) Adjusts principal output only of multi-output models.
- (2) 3.3V models only.
- (3) See specifications for range of control.
- (4) Except 30W models.
- (5) Except 15 and 25W models.

## Kepco Modular Power Supplies Characteristic Selection Charts

The six charts that follow summarize the principal characteristics of Kepco's modular type power supplies.

Tables are included for their output adjustment abilities, physical characteristics, input and output characteristics, power rating and warranty/safety/EMI features. As these power supplies include a-c to d-c units, as well as d-c to d-c converters, and encompass box-type power units as well as low-cost PC card models, it requires a good deal more information than simply knowing the desired voltage and current to make an appropriate choice.

Most groups include models in approximately the same voltage ranges: 3.3V, 5V, 12V, 15V, 24V, 28V and 48V. We have especially tried to make the range of adjustment wide enough so that, for example, 15V models are suitable for 13.8V application and 24V models can function at 20V, etc.

If you don't see exactly what you are looking for in the tables that follow, give us a call.

PHY:	SICAL CHA	RAC	TERISTIC	:S			
	Design Group	Page Index	Enclosed	Card or L-Chassis	PC Card Mount	Optional Cover	Low Profile
ABLE	RKW PROGRAMMABLE	83	•				
MM/ OULE	нѕм	89	•				
PROGRAMMABLE MODULES	PAT	93	•				
PR	PTR	93	•				
	JBW	96			•		•
COMMERCIAL GRADE	RKW OPEN FRAME	99		•		•	•
MME GRA	FAW	105		•		•	•
COI	KRW	108		•		•	•
	MRW	108		•		•	•
ıL	ERD	113	•				
INDUSTRIAL GRADE	PRM	116	• (1)			• (2)	
IDUS GR/	RAX	121	•				
=	RCW	125	•				



<sup>(2)</sup> Size A, AA and C.



Model JBW - PC Card mount



Model RKW - Enclosed

Kepco, Inc. has, since 1976, marketed selected switch-mode power supplies made by the TDK Electronics Corporation. We are proud that TDK's facilities have received certificates by various agencies to recognized Quality Standards. TDK-Taiwan, for example, has been awarded Lloyd's Register Quality Assurance Certificate of Approval to ISO 9002-1987, EN29002-1987 and CNS 12682 Z4035:1990, Certificate #923297. This facility is approved by BABT.

TDK also has approval by the British Approvals Board for Telecommunications, BABT. Additionally JMI (Japan Materials Institute) has issued a certificate of registration (JMI 0006) for approval under ISO 9001-1987/BS 5750 and EN29001-1987.



The quality management system represented by these certificates are your assurance of a world-class product, produced under critically controlled quality procedures and backed by a Kepco limited warranty that protects instrumentation products and industrial grade switchers for five (5) full years and commercial grade OEM products for one (1) year.

Kepco's facility in Flushing, New York, has received ISO 9001 certificate number 109592 from Lloyd's Register of Quality Assurance.



INPU	T CHARACT	TERIS'	TICS										
	D				115- 230	115- 230	0001			d-c	Input		
	Design Group	Page Index	PFC	115V a-c	Wide Range	Select- able	230V a-c	12V	24V	28V	48V	60V	150V
PROGRAMMABLE MODULES	RKW PROGRAMMABLE	83	•		•								•
VMM,	HSM	89	•		•								•
NGR/	PAT	93				•							
PR	PTR	93				•							
	JBW	96			•								•
COMMERCIAL GRADE	RKW OPEN FRAME	99	•(3)		•								•
AME	FAW	105			•								•
8	KRW	108			•								•
	MRW	108			•								•
4	ERD	113							•	•(2)	•		
INDUSTRIAL GRADE	PRM	116		•			•(1)						
IDUS GR/	RAX	121				•							
=	RCW	125	•		•								•

(1) -50 models for 230V a-c 50Hz. Derate to 80% of rated current. NOTE: HSM, RCW, RKW, FAW, KRW and MRW have safety agenc only. They also operate from d-c input, but their fuse is not agency-approved for d-c input

(2) ERD input range:20~30V and 40~56V d-c.

(3) Except 30W RKW.

SAFI	ETY/WARR	ANT	Y CH	ARAC	CTER	RISTI	ICS				
	Design Group	Page Index	UL RECOGNIZED	C TUS UL/CSA RECOGNIZED	CSA CERTIFIED	TÜV APPROVED	VDE VDE APPROVED	Conduc Class A	ted EMI Class B	This KEPCO product is backed by a firm 1. YEAR WARRANTY	This KEPCO product is bedoed by a firm
ABLE	RKW PROGRAMMABLE	83		•		•			•(2)		•
NMM/	нѕм	89	•	•			•	•			•
PROGRAMMABLE MODULES	PAT	93						NA <sup>(3)</sup>	NA <sup>(3)</sup>		•
PR	PTR	93						NA <sup>(3)</sup>	NA <sup>(3)</sup>		•
	JBW	96	•		•	•			•	•	
COMMERCIAL GRADE	RKW OPEN FRAME	99		•		•			•	•	
AIME GRAE	FAW	105	•		•	•				•	
9	KRW	108	•		•	•			•	•	
	MRW	108	•		•	•			•	•	
4	ERD	113	•		•				•		•
INDUSTRIAL GRADE	PRM	116	•(1)						•(4)		•
IDUS GR/	RAX	121	•		•	•		•			•
=	RCW	125	•		•	•		•	•(5)		•

- (1) Selected models
- (2) RKW 1500W models Class A, use external filter for Class B.
- (3) PAT and PTR are linear stabilizers, not switchers.
- (4) ERD are d-c to d-c converters. Meet conducted EMI of MIL STD 461B.
- (5) 350W models only

ELEC	TRICAL O	UTPU	T CHARACTE	RISTICS	
	Design Group	Page Index	a-c to d-c Single Output	a-c to d-c Multiple Output	d-c to d-c Single Output
'BLE	RKW PROGRAMMABLE	83	•		
PROGRAMMABLE MODULES	нѕм	89	•		
OGR/	PAT	93	•		
A.	PTR	93	•		
	JBW	96	•		
COMMERCIAL GRADE	RKW OPEN FRAME	99	•		
MMEI GRAI	FAW	105	•		
8	KRW	108		•	
	MRW	108		•	
4	ERD	113			•
ADE ADE	PRM	116	•	•	
INDUSTRI/ GRADE	RAX	121	•		
	RCW	125	•		



Model PAT/PTR a-c to d-c single output Programmable linear voltage stabilizers

POW	ER RANGE	WATI	S												
	Design Group	Page Index		1	2	5 1	0 <i>i</i>	20	50 1	00 2 	00 5	00 10 	)00 20 	000 50	00W
ABLE	RKW PROGRAMMABLE	83													
MM/	нѕм	89													
PROGRAMMABLE MODULES	PAT	93													
PR	PTR	93													
	JBW	96													
COMMERCIAL GRADE	RKW OPEN FRAME	99													
MMEI	FAW	105													
9	KRW	108													
	MRW	108													
4	ERD	113													
INDUSTRIAL GRADE	PRM	116													
dDUS GR/	RAX	121													
	RCW	125													



Model RAX 50~300 watts



# KEPCO POWER SUPPLIES

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