SERIES **ATE-DMG**

Model ATE 6-100 DMG

ATE-DMG MODEL TABLE

MODEL	d-c OUTPUT RANGE		MAXIMUM OVERVOLTAGE SETTING	MAXIMUM OVERCURRENT SETTING	OUTPUT IMPEDANCE VOLTAGE MODE			OUTPUT IMPEDANCE CURRENT MODE		
	VOLTS	AMPS			SERIES R	SERIES L [1] SLOW	FAST	SHUNT R [2]	SHUNT C [3] SLOW	FAST
SIZE "E" FULL-RACK (1000 Watt)										
ATE 6-100 DMG	0-6	0-100	6.59V	110A	1.2µΩ	0.5µH	5µH	12kΩ	22,000µF	15µF
ATE 15-50 DMG	0-15	0-50	16.5V	55A	6µΩ	0.5µH	5µH	30kΩ	12,000µF	6µF
ATE 25-40 DMG	0-25	0-40	27.5V	44A	12.5µΩ	1µH	10µH	50kΩ	11,000µF	4µF
ATE 36-30 DMG	0-36	0-30	38.3V	33A	24µΩ	1µH	10µH	72kΩ	9,500µF	3µF
ATE 55-20 DMG	0-55	0-20	66V	22A	55µΩ	2µH	20µH	110kΩ	5,200µF	2.25µF
ATE 75-15 DMG	0-75	0-15	82V	16.5A	0.1mΩ	2µH	20µH	150kΩ	3,400µF	1.5µF
ATE 100-10 DMG	0-100	0-10	110V	11A	0.2mΩ	4µH	40µH	200kΩ	1,200µF	0.75µF
ATE 150-7 DMG	0-150	0-7	185V	7.7A	0.42mΩ	4µH	40µH	300kΩ	1,050µF	0.3µF

(1) For the calculation of dynamic impedance in voltage mode.
(2) Based on 0.5mA load effect in FAST mode.
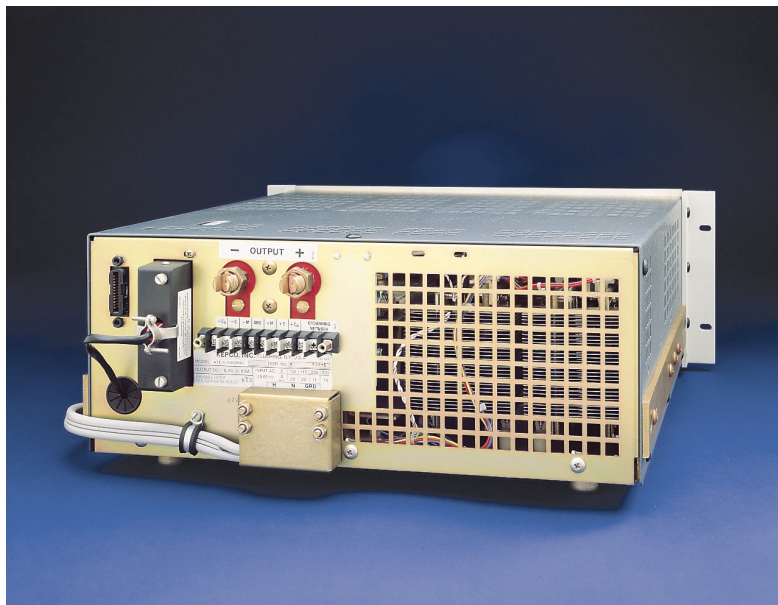(3) For the calculation of dynamic impedance in current mode.

Kepco's 1000 watt instrument-grade digital power supplies, series ATE-DMG, are linear low-noise power supplies designed to respond very quickly and precisely to voltage and current setting instructions delivered interactively by the GPIB (IEEE 488.2) or from a front panel keypad. When programmed from the bus, the ATE-DMG power supplies respond to the SCPI (Standard Commands for Programmable Instruments) common language for instruments used in an automatic test system.

This KEPCO product is backed by a firm
5-YEAR WARRANTY

ATE-DMG are CE marked per the Low Voltage Directive (LVD), EN61010-1.

ATE-DMG digital power supplies are locally controlled exclusively through a 24-key panel keypad. This offers full control over the voltage and current settings, as well as overvoltage, overcurrent and a time setting. The keypad allows the user to store as many as 40 combinations of these parameters and to loop back onto itself to produce repetitive programs. The setting values as well as the actual output delivered to the load are displayed in the two-line, 16 character back-lit LCD.

Remote control is via the built-in IEEE-488.2 interface that offers full talk-listen functionality on the bus. The settings and the actual voltage-current values are read back on the bus upon command. The output can be modulated by analog signals in the same fashion as Kepco's non-digital ATE-series power supplies. The ATE-DMG retains the ATE-series' signature high-speed control mode which enables rapid output programming and fast voltage recovery to load changes in current-control mode.

Rear View of Model ATE 6-100 DMG

FEATURES

- Linear control for low noise: 100 micro-volts typical in voltage mode; and high precision: 0.0005% source effect {regulation} in voltage mode.

- Voltage and current control with equivalent performance. A high speed mode allows fast-recovery current-controlled stabilization into a varying load.

- Overvoltage and overcurrent settings individually programmed by the front panel keypad or remotely by the bus with a programmable delay to allow for reactive-load transients.

- A manually set overvoltage crowbar monitors the output to protect sensitive loads. This setting is done only from the front panel and cannot be modified by the keypad or GPIB.

- Non-volatile storage of programmed sequences or active settings. The ATE-DMG contains 40 memory locations that store voltage, current, overvoltage, overcurrent, time (how long the parameters are in effect) and the next address in the sequence.

- Full talk-listen control from a GPIB (IEEE 488-2) using SCPI language.

- Master-slave series and parallel operation to provide increased capability.

- Local control: Front panel keypad entries are used for setting and adjusting the output. The keypad can be used to execute commands directly or to introduce a program to be run later or cycled. Calibration of the ATE-DMG is done from the keypad using a password-protected, menu-driven procedure.

The dynamic characteristics are tabulated in the Dynamic Specifications Table. Analog control of voltage and current is via a pair of remote signals (0-10V for voltage, 0-1V for current). Two uncommitted op-amps are provided internally to allow available control signals to be scaled and, if necessary, inverted to suit the circumstances.

ATE-DMG DYNAMIC SPECIFICATIONS

OUTPUT VOLTAGE RATING	PROGRAMMING BANDWIDTH (KHz)		PROGRAMMING TIME CONSTANT (μsec)	
	Typical	minimum	Typical	maximum
6V	23.0	16.0	7.0	10.0
15V	20.0	10.6	8.0	15.0
25V	11.5	8.0	14.0	20.0
36V	8.0	6.4	20.0	25.0
55V	4.8	4.0	33.0	40.0
75V	4.3	3.5	37.0	45.0
100V	2.7	2.5	60.0	65.0
150V	1.8	1.7	88.0	95.0

ATE-DMG STATIC SPECIFICATIONS

INFLUENCE QUANTITY		OUTPUT EFFECTS VOLTAGE MODE		OUTPUT EFFECTS CURRENT MODE		OFFSETS	
		Typ.	Max.	Typ.	Max.	ΔE_{i_0}	ΔI_{i_0}
Source Voltage (min.-max.)		<0.0005% E_O max.	0.001% E_O max.	<0.002% I_O max.	0.005% I_O max.	<1μV	<1nA
Load (no load-full load)		<0.001% E_O max.	0.002% E_O max.	<0.5 mA[1]	1 mA[1]	—	—
Time (8-hour drift)		<0.005% E_O max.	0.01% E_O max.	<0.01% I_O max.	0.02% I_O max.	<20μV	<1nA
Temperature, per °C		<0.005% E_O max.	0.01% E_O max.	<0.01% I_O max.	0.02% I_O max.	<20μV	<2nA
Ripple and Noise [2] (Slow Mode)	rms:	<0.1mV	0.3mV	<0.01% I_O max.	0.03% I_O max.	—	—
	p-p:[3]	<1mV	3mV	<0.1% I_O max.	0.3% I_O max.	—	—
Ripple and Noise [2] (Fast Mode)	rms:	<1mV	3mV	<0.01% I_O max.	0.03% I_O max.	—	—
	p-p:[3]	<10mV	30mV	<0.1% I_O max.	0.3% I_O max.	—	—

(1) For I_O>50A, load effect = 2mA typ., 5mA max. In slow mode, the output capacitor adds 0-6mA to current mode load effect.

(2) One terminal grounded so that common mode current does not flow through load or current-sense resistor.
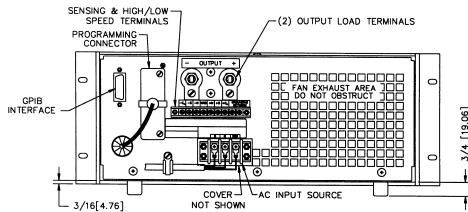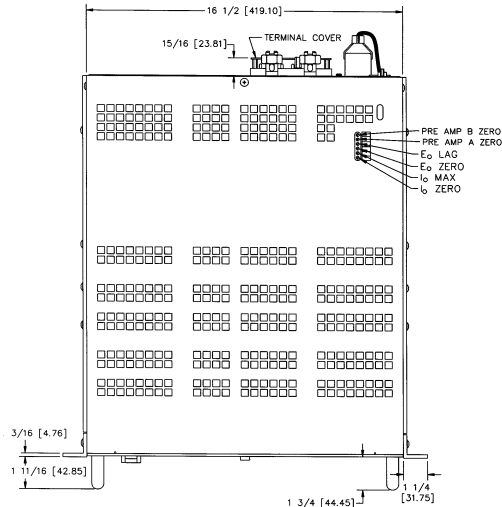
(3) BW: 20Hz-10MHz.
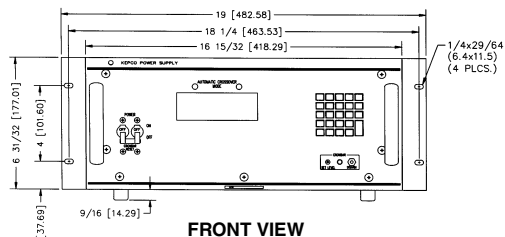
OUTLINE DIMENSIONAL DRAWINGS

Fractional dimensions in light face type are in inches,
dimensions in parentheses are in millimeters.
Tolerance: ± 1/64" **(0.4)** between mounting holes
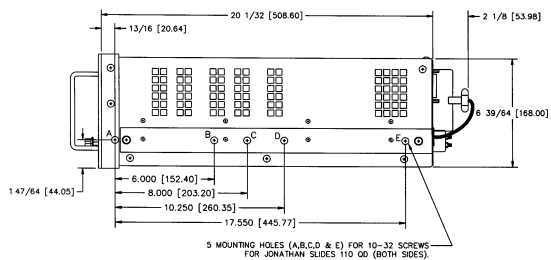± 1/32" **(0.8)** other dimensions

REAR VIEW

TOP VIEW

FRONT VIEW

SIDE VIEW

(1) 0-6V models: 0.25V.

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ATE-DMG GENERAL SPECIFICATIONS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
INPUT		
a-c Voltage	95-113, 105-125, 190-226, 210-250V a-c	User selectable
Current	20A a-c	Max load, 125V a-c
Frequency	47-65Hz	Range
OUTPUT		
d-c Output	Series pass	Transistor
Voltage	0-100% of rated voltage	
Current	0-100% of rated current	Usable range limited to approx. 1% to 100%. Max. current is factory set to 105% of rated output current.
Type of Stabilizer	Automatic crossover	Voltage/current
Voltage	0 to 100% of rating	Adjustment range for temp 0-55°C
Current	0 to 100% of rating	
	0 to 90% of rating	For temp 65°C
Storage Temp. Range	(−)40°C to 85°C	
Error Sense	0.5V per load wire(1)	Voltage allowance
Isolation Voltage	500V d-c or peak	Output to ground
Leakage Current	<5 microamperes	rms at 115V a-c
Output to Ground	<50 microamperes	p-p at 115V a-c
Series Connection	500V	Max voltage off ground
Parallel Connection	Automatic	Use current mode limiting
	Current sharing	Use master-slave connection
	Redundancy type	External or-ing diodes
OVP Type	Crowbar	
Control	Local or program or track	
Trigger time	50 microseconds	Normal
Trigger time	500 microseconds	Delayed
Threshold	Min. 0.5 volts, or 2% E_O max.	Whichever is greater
Temp. coefficient	<0.02% of E_O max. per °C	
CONTROL		
Program. Voltage	<0.025% E_O max	
Accuracy Current	<0.25% I_O max	
Readback/display Accuracy Voltage	<0.05% E_O max	
Current	<0.275% I_O max	
Voltage Remote	12-bit digital	
Current Limit	10-turn precision rheostat	
Remote	12-bit digital	
Programming Time	1.2ms max	0-100%
Data Entry Local	24 keypads	Front panel
Remote	GPIB	SCPI commands
Dynamics Normal (slow)	dV/dt = I/C	See tabulated value of C in the model table
Fast mode	See Table	Dynamic spec table
MECHANICAL		
Weight	96lb (43.6Kg)	Packed for shipment
Dimensions inches mm	$6^{31}/_{32}$ x 19 x $20^1/_{64}$ 177 x 482.6 x 504.8	Full rack size
a-c Source Connections	Terminal block	
d-c Output Connections	Rear binding post	I_o <30A
	Rear compression studs	I_o ≥30A
User Port	50-terminal connector	
Indicators	Three LEDs	Voltage/Current/OVP
Remote Control Programming	One standard GPIB connector	Rear, SCPI & IEEE 488.2 commands
Digital Display Front Panel	Voltage, current, mode status, menu, program, etc.	2 x 16 character alphanumeric LCD with LED backlight
Mounting (in std 19" racks)	Mounting "ears" supplied	
Cooling	Forced air	High efficiency, single bearing fans, permanently lubricated with special low-noise metallic blades. Exhaust to rear.
Finish: Fed Std 595	Dark & light gray, color 26440	Front panel, 2 tone