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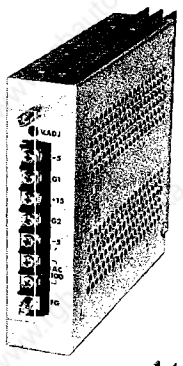
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KEPCO/TDK triple-output switching modules
for microprocessors and logic applications

RMT

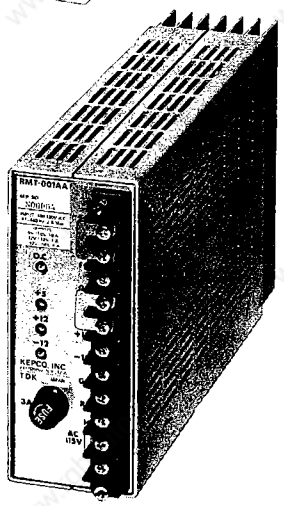
The KEPCO/TDK Series RMT provide the instrument designer with a compact, high efficiency source of the multiple voltages needed to drive modern digital-analog circuits. Each model provides a basic 5V logic output. The SA size is rated at 0–6 amperes; the AA size provides 0–10 amperes. These are combined with various auxiliary outputs as tabulated below.



Size SA

MODEL	PRINCIPAL OUTPUT #1		AUXILIARY OUTPUT #2		AUXILIARY OUTPUT #3	
	Volts	Amps	Volts	Amps	Volts	Amps
RMT 021 SA	+5	6	+12	0.3	−12	0.3
RMT 022 SA	+5	6	+15	0.3	−15	0.3
RMT 023 SA	+5	6	+12	0.3	−5	0.3
RMT 024 SA	+5	6	+15	0.3	−5	0.3
RMT 025 SA	+5	6	+12	0.3	−9	0.3

50°C ratings. At +71°C, derate the principal output to 2.4A. Derate each auxiliary output to 0.1A.



Size AA

MODEL	PRINCIPAL OUTPUT #1		AUXILIARY OUTPUT #2		AUXILIARY OUTPUT #3	
	Volts	Amps	Volts	Amps	Volts	Amps
RMT 001 AA	+5	10	+12	1	−12	1
RMT 002 AA	+5	10	+15	1	−15	1
RMT 003 AA	+5	10	+12	1	−5	1
RMT 004 AA	+5	10	+15	1	−5	1
RMT 005 AA	+5	10	+12	1	−9	1

50°C ratings. At +71°C, derate principal output to 4.0A. Derate each auxiliary output to 0.3A.
For 230V a-c input, add Suffix "-230" to model number.

MODULAR/SWITCHING

SPECIFICATIONS

INPUT CHARACTERISTICS

Model number suffix denotes both size and range of a-c input voltage.

Suffix	a-c Input	Brown-out	d-c Input
SA	100–130V, 47–440Hz, 0.85A Typ.	*85Va-c/110Vd-c	130–170V
AA	100–130V, 47–440Hz, 2.0A Typ.	*85Va-c/110Vd-c	130–170V
AA-230	200–260V, 47–440Hz, 1.2A Typ.	180Va-c/234Vd-c	260–340V

The Size AA and AA-230 are the same, except for the input.

***BROWN-OUT** is typically 80V a-c/105V d-c for SA and AA models. Operation is maintained down to the brown-out input levels with minor degradation in performance (slightly higher ripple, larger load effect, reduced holding time).

SOFT START: All models have a surge limiting circuit to limit the turn-on current. In the "AA" and "AA-230" designs, a separate logic level on-off circuit is provided for no-surge operation.

EFFICIENCY: More than 65%.

EMI: Filters are built into all models to attenuate the line-conducted electromagnetic interference to levels that are acceptable for most applications. Accessory filters may be used between the power supply and the source power line to further attenuate the conducted EMI.

ACCESSORY FILTERS AVAILABLE FROM KEPCO

MODEL	VOLTS	AMPS	ATTENUATION TYP.	ATTENUATION MIN.	FREQUENCY RANGE
FLT-3A	250V a-c	3A	70 dB	60 dB	0.15–20 MHz
FLT-10A	250V a-c	10A	65 dB	40 dB	0.7 –30 MHz

HOLDING TIME: RMT stores sufficient energy in its filters to sustain the d-c output a minimum of 20 milliseconds after source power is lost.

WITHSTAND VOLTAGE:
115V a-c models: 1.5 kV a-c for 1 minute chassis to input.
230V a-c models: 2.5 kV a-c for 1 minute chassis to input.

OUTPUT CHARACTERISTICS

VOLTAGE ADJUSTMENT RANGE: All outputs adjustable ±10%.

CURRENT LIMIT:

Principal outputs: Current limit is adjustable, and has a rectangular characteristic.

Auxiliary outputs:
Size SA, current limit is fixed (≅110%); re-entrant type.
Size AA, current limit is fixed (≅110%); rectangular type.

RECOVERY CHARACTERISTICS: A step load change from 50% to 100% produces less than 2% output excursion (or 0.5V, whichever is greater). Recovery occurs to within 0.5% (or 0.05V, whichever is greater) of the original setting within 5 milliseconds.

OVERVOLTAGE PROTECTION:

Size SA: The principal output is protected by an overvoltage protector which shuts down the switching oscillator if its voltage reaches approximately 120% of the rated nominal voltage. To reset, turn the primary power off for approximately 5 seconds and then back on.

Size AA: If the output voltage of any of the three stabilized voltages reaches Approximately 120% of its rated nominal, the overvoltage protectors bring the regulator to a stop by inhibiting the oscillator. To reset, turn the primary power off for approximately 5 seconds and then back on.

REMOTE ERROR SENSING (Size AA only): (5V, 10A output) compensates for up to 0.25V drop per load wire.

REMOTE CONTROL (Size AA only): The output can be turned on and off by TTL compatible logic level switching. An internal pull-up resistor programs the power supply on in the absence of external signals.

OUTPUT ISOLATION (Size SA): 20 megohms at 500V d-c, any output to chassis. *Note:* the auxiliary outputs are isolated from the principal output but share a single common terminal to produce the indicated + and − voltages. The principal output has a separate ground return.

OUTPUT ISOLATION (Size AA): 20 megohms at 500V d-c, any output to chassis. *Note:* outputs are not isolated from each other, but produce the indicated levels and polarities with respect to a single common.

STABILIZATION

The SA models employ a modulated switching circuit in the primary to provide both the high frequency power transfer across a ferrite transformer and the stabilization for the principal output. The auxiliary outputs are stabilized by I-C driven, linear series-pass circuits operating from a separate, unmodulated oscillator.

The Size AA models employ an unmodulated switching oscillator to provide high frequency power transfer across a ferrite power transformer. Each of the three outputs is then stabilized by a series transistor modulated chopper.

STATIC STABILIZATION	RMT-AA (ALL 3 OUTPUTS) RMT-SA Principal Output Typ.	Max.	RMT-SA Auxiliary Outputs Typ.	Max.
SOURCE EFFECT (min-max):	<0.4%	0.8%	<0.1%	0.2%
LOAD EFFECT (10%-100%):	<0.4%	1.0%	<0.1%	0.2%
TEMPERATURE EFFECT Coefficient per °C:	<0.02%	0.1%	<0.01%	0.05%
Envelope, 0-50°C:	<0.6%	1.0%	<0.4%	0.6%
COMBINED EFFECT (For rated changes in source voltage, load current and temperature):	<1.4%	2.8%	<0.6%	1.0%
TIME EFFECT (8-hour drift) Constant source voltage load and temperature:	<0.01%	0.05%	<0.01%	0.05%
RIPPLE and NOISE: rms:	7 mV	10 mV	4 mV	7 mV
2 x source:	20 mV	50 mV	2 mV	10 mV
2 x switching:	30 mV	100 mV	2 mV	10 mV
Spike voltage to 10 MHz:	70 mV	100 mV	70 mV	100 mV

GENERAL

TEMPERATURE: 0 to +50°C full rating. See Rating table.

SHOCK and VIBRATION: *Shock:* 2g, 3 axes.
Vibration: 2g, 5 Hz to 55 Hz.

DIMENSIONS: (English = inches, metric = mm.)

Size SA	CASE	OVERALL
English:	5.12" x 1.38" x 6.97"	5.12" x 1.38" x 7.60"
Metric:	130H x 35W x 177D	130H x 35W x 193D

Size AA	CASE	OVERALL
English:	5.12" x 2.17" x 8.82"	5.12" x 2.17" x 9.61"
Metric:	130H x 55W x 224D	130H x 550W x 244D

WEIGHT:
Size SA: 1.4 lbs., 0.65 Kg.
Size AA: 3.3 lbs., 1.5 Kg.

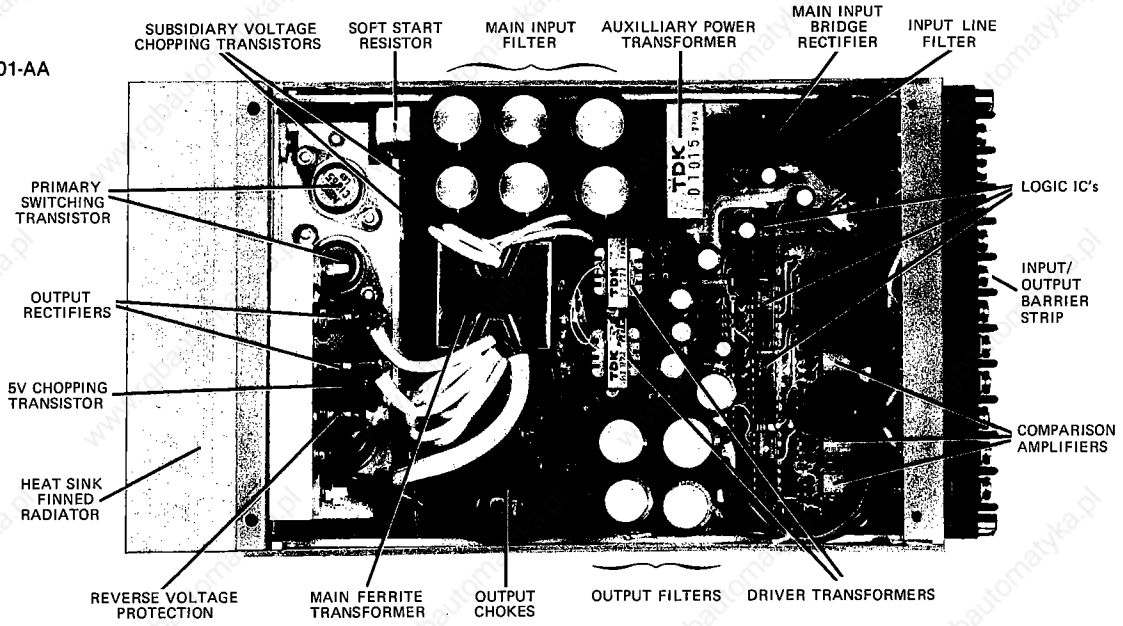
MOUNTING: 8-32 tapped holes allow RMT to be fastened to any of the four major surfaces.

FINISH: Phosphate treated aluminum.

MODULAR/SWITCHING

An important feature of these switching power supplies is their **single board** construction. All components are mounted to a single PC card whose obverse is readily available for measurements and service. Compare them to the complex convoluted construction of many competitve models.

Interior view
Model RMT 001-AA



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