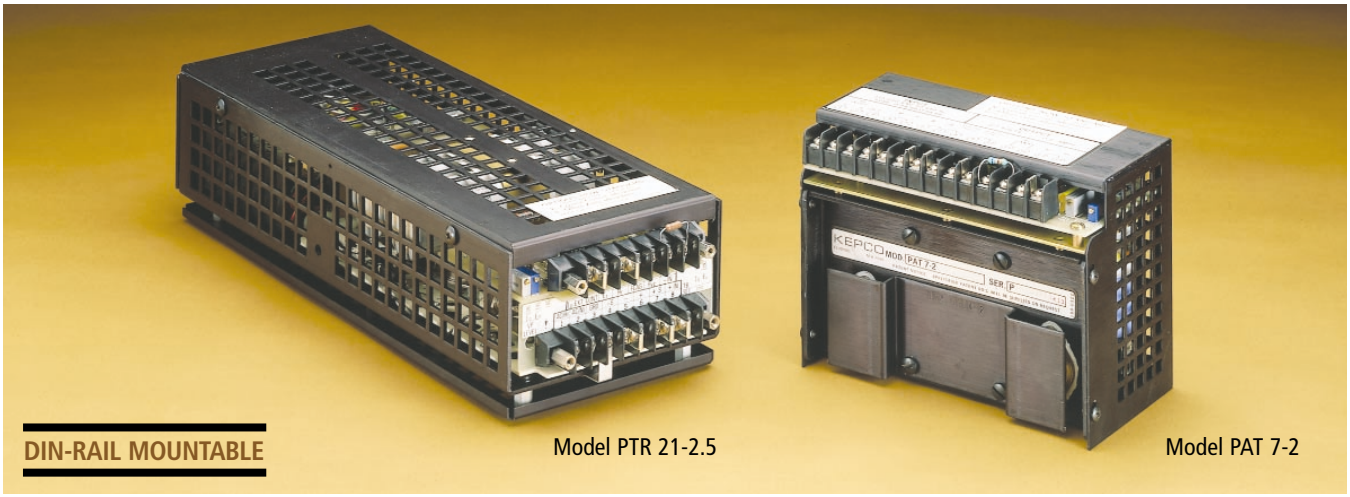


PAT MODEL TABLE

MODEL	d-c OUTPUT RANGE VOLTS	AMPS	OUTPUT IMPEDANCE(1) VOLTAGE MODE SERIES RESISTANCE	SERIES INDUCTANCE	CURRENT MODE SHUNT RESISTANCE	SHUNT CAPACITANCE
PAT 7-2	0-7	0-2	0.2mΩ	1μH	250KΩ	2.9KμF
PAT 15-1.5	0-15	0-1.5	0.5mΩ	1μH	333KΩ	2.0KμF
PAT 21-1	0-21	0-1	1mΩ	1μH	500KΩ	1.4KμF
PAT 40-0.5	0-40	0-0.5	4mΩ	1μH	1.0MΩ	950μF
PAT 72-0.3	0-72	0-0.3	12mΩ	1μH	1.6MΩ	375μF
PAT 100-0.2	0-100	0-0.2	25mΩ	1μH	2.5MΩ	275μF

PTR MODEL TABLE

PTR 7-5.5	0-7	0-5.5	64μΩ	0.5μH	90KΩ	1250μF
PTR 15-3.3	0-15	0-3.3	225μΩ	0.5μH	150KΩ	800μF
PTR 21-2.5	0-21	0-2.5	420μΩ	0.5μH	200KΩ	500μF
PTR 40-1.4	0-40	0-1.4	1.4mΩ	0.5μH	350KΩ	350μF
PTR 72-0.8	0-72	0-0.8	4.5mΩ	0.5μH	625KΩ	300μF
PTR 100-0.6	0-100	0-0.6	10mΩ	0.5μH	840KΩ	100μF

(1) The tabulated shunt resistance applies for current stabilization using external sensing and feedback. The shunt resistance for the internal sensing mode is E_o/5mA.

PAT STATIC SPECIFICATIONS

INFLUENCE QUANTITY		OUTPUT EFFECTS VOLTAGE MODE	OUTPUT EFFECTS CURRENT MODE INTERNAL	EXTERNAL	AMPLIFIER OFFSETS OFFSET VOLTAGE ΔE_{io}	OFFSET CURRENT ΔI_{io}	VOLTAGE REFERENCE (INTERNAL)
Source Voltage (min.-max.)		<0.0005%	<0.005%<10μV<2nA		<0.0001%		
Load No load-full load		<0.005% or 0.2mV(2)	<0.01%		<200μV	<5nA	—
Time 8-hours (drift)		<0.01% or 1mV(2)	<0.02%		<20μV	<2nA	<0.005%
Temp. Per °C		<0.01%	<0.02%		<20μV	<5nA	<0.005%
Ripple and Noise(4)	rms	<0.1mV	<0.2% of I_O max		—	—	—
	p-p(5)	<0.5mV	<0.1% of I_O max		—	—	—

PTR STATIC SPECIFICATIONS

Source Voltage (min.-max.)		<0.001%	<0.005% or 25μA(2)	<0.005%	<5μV	<1nA	<0.0001%
Load No load-full load		<0.005% or 0.1mV(2)	<3.0mA(3)	<0.01%	<100μV	<5nA	—
Time 8-hours (drift)		<0.01% or 0.2mV(2)	<0.05% or 0.1mA(2)	<0.02%	<20μV	<1nA	<0.005%
Temperature Per °C		<0.01%	<0.05% or 0.1mA(2)	<0.02%	<20μV	<2nA	<0.005%
Ripple and Noise(4)	rms	<0.1mV	<0.5mA	<0.5mA	—	—	—
	p-p(5)	<2.0mV	<2.0mA	<2.0mA	—	—	—

These are operationally programmable power modules that can be programmed to any level within their rated range and fully loaded at any output setting.

SERIES PAT offers a single, high gain channel for voltage or current stabilization, backed by an adjustable overcurrent limiter.

SERIES PTR provides separate channels for voltage and current stabilization, with automatic crossover, and an optional overvoltage crowbar that mounts within the module.

In both series the amplifiers have very low offsets for accurate tracking of programming instructions and exceptionally stable output in fixed applications. Voltage may be operationally controlled using the built-in stable reference and summing resistance together with an external voltage feedback rheostat.

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

PAT/PTR can be individually installed or may be combined into a custom power assembly for multi-output requirements. Please see pages 131-135 for details on Kepco's Power Assembly Program.

KEPCO POWER ASSEMBLY PROGRAM

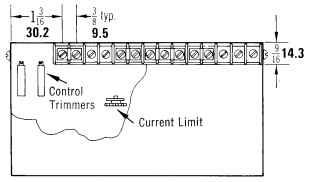
(1) The output effect can be calculated by the relationship: $\Delta Eo=\pm\Delta Er(Rf/Ri)\pm\Delta Eio(1+Rf/Ri)\pm\Delta Iio(R_f)$ where R_f is the feedback resistor, and R_i is the input resistor from the reference, E_r.
(2) Whichever is greater.
(3) 5mA with PTR's "-VP" option.
(4) One terminal grounded or connected so that the common mode current does not flow through the load or (in current mode) through a sensing resistor.
(5) Peak-to-peak ripple is measured over 20Hz to 10MHz bandwidth.

KEPCO, INC. • 131-38 Sanford Avenue
Flushing, NY 11352 USA • Tel: (718) 461-7000
Fax: (718) 767-1102 • Email: hq@kepcopower.com
www.kepcopower.com/pat.htm
www.kepcopower.com/ptr.htm

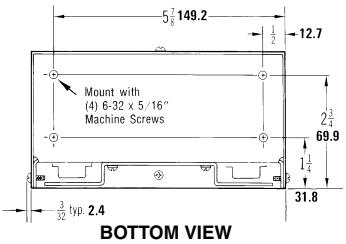
OUTLINE DIMENSIONAL DRAWINGS

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

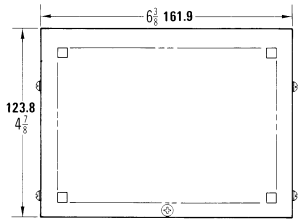
SERIES PAT



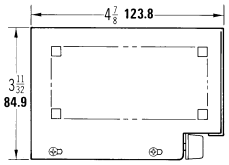
TOP VIEW



BOTTOM VIEW
(showing mounting holes)

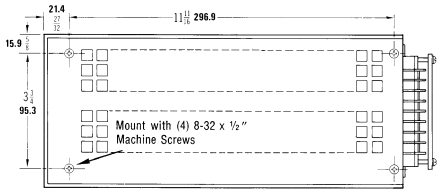


REAR VIEW

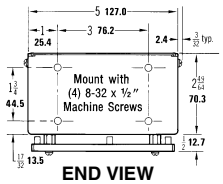


SIDE VIEW

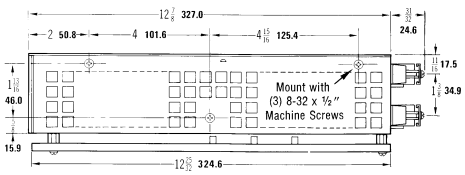
SERIES PTR



BOTTOM VIEW



END VIEW



SIDE VIEW

PAT & PTR GENERAL SPECIFICATIONS

SPECIFICATION	CONDITION	RATING/DESCRIPTION
INPUT		
a-c Voltage	User selectable	105-125, 210-250V a-c
Current	Max load, 125V a-c	PAT: 0.45 Amps rms PTR: 1.2 Amps rms
Frequency	Range	50-440Hz
OUTPUT		
d-c Output	Series pass	Transistor
Type of stabilizer	PAT: Voltage stabilizer	Current limit
	PTR: Voltage/current	Automatic crossover
Voltage	Adjustment range for temp -20°C to 71°C	0 to 100% of rating
Current		0 to 100% of rating
Error sense	Voltage allowance	0.5V per load wire
Isolation voltage	Output to ground	500V d-c or peak
Leakage current	rms at 115V a-c	<5 microamperes
Output to ground	p-p at 115V a-c	<50 microamperes
Series connection	Max voltage off ground	500V
Parallel connection	Automatic	Use current mode limiting
	Current sharing	Use master-slave connection
	Redundancy type	External steering diodes
OVP (option on PTR. Add suffix "-VP." Not available on PAT.)	Type	Crowbar
	Setting range	4.8V-110% E_O
	Threshold	5% E_O max. or 0.5V, whichever is greater
	Temp. effect on setting	±0.03%/°C
CONTROL		
Type	Voltage	Variable gain
	Current	Differential comparison
Voltage	Remote analog	0 to 1mA
	Remote digital	Use SN digital to analog converter
Current	Remote analog	0 to 0.5V d-c
	Remote digital (PTR only)	Use SN digital to analog converter
Dynamics	Normal (slow) only	dV/dt=I/C (see tabulated C)
MECHANICAL		
Input connection	All models	Barrier strip
Output connection	All models	Barrier strip
Mounting	PAT	Use 6-32 hardware to recessed captive nuts. For rack mounting, use adapter RA 26-1, RA 27-2, or RA 28-4.
	PTR	Use 8-32 hardware to recessed captive nuts. For rack mounting, use adapter RA 35-1, RA 33-3, or RA 34-4.
Dimensions (HxWxD)	PAT	4⅞ x 6⅜ x 3 11/32 inches 123.8 x 161.9 x 84.9 mm
	PAT	3 17/64 x 5 x 13 27/32 inches 83 x 127 x 351.6 mm
Finish	All models	Black anodized aluminum
Weight (packed for shipment)	PAT	6lb (2.7Kg)
	PTR	11lb (5Kg)

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