

Model PR-30 Regulated Dual Power Supply

GAP/R
MODEL
PR-30



GENERAL DESCRIPTION

Model PR-30 is a compact dual utility power supply of modest cost and performance. It was designed to supply conservatively rated regulated power for small groups of solid state operational amplifiers and their associated circuits.

Its 30 milliamperes at ± 15 volts will provide sufficient power for up to:

- 7 Philbrick Model P65's or PP65's
- 2 P2's
- 3 P65's and 1 P2
- 2 P65's and 1 P66 Booster Amplifier at full load worst case
- 2 P65's and 2 P66's (where the sum of the load currents does not exceed 20 ma)
- 1 or 2 SP656's (where the sum of the load currents does not exceed 20 ma)

Model PR-30 is housed in an aluminum exoskeleton with black anodize finish.

This power supply's active elements are all silicon. Though designed for laboratory service, it can be used at temperatures ranging from -30°C to $+80^{\circ}\text{C}$, and stored at -55°C to $+85^{\circ}\text{C}$.

It contains two independent regulated power supplies with separate references and a common ground lead. The upstream portion consists of two full wave silicon rectifiers, which provide + and -30 volts from a common center-tapped transformer winding.

The TR-30 Dual Regulator Amplifier uses PNP and NPN transistors in mirror symmetry. It is wired on a printed circuit board with rhodium-nickel-plated edge connectors and is the same size as Model P65. It is available alone for applications where PR-30's circuit may be suitable electrically but where other mechanical configurations are desired. The TR-30 mates with a CD-610S female edge connector, normally supplied when TR-30 is supplied separately.

TENTATIVE CHARACTERISTICS

INPUT: 30 ma max. at 105-125 vac, 60 cps. Can be used at frequencies from 50 cps to 400 cps.

Connections:

- PR-30 (Bench Model) via standard 15 amp 115 vac plug and 6 foot cord.
- PR-30C (Chassis Model) via 8-prong Blue Ribbon connector.

OUTPUT:

- 0 to 30 ma at +15 vdc
 - 0 to 30 ma at -15 vdc
- { preset at factory to within 1% at 25°C, 115 V 60 cps line. No adjustments provided.

Connections:

- PR-30: via 3 std. "5-way" binding posts
- PR-30C: via 8-prong Blue Ribbon connector

REGULATION (at 25°C): 1% max. (transient or steady state) under either of these conditions:

- Line voltage: 115V $\pm 10\%$ at 50-60 cps
- Load: 0 to 30 ma

NOISE AND RIPPLE (at 25°C, rated load): Less than 15 mv ac average, worst case; typically less than 5 mv.

INTERNAL IMPEDANCE: Less than 5 Ω either section, at any frequency

MAX. SHORT CIRCUIT CURRENT (design center): 200 ma. Primary fuse will blow at about 100 ma. input.

TEMPERATURE RANGE:

- Operating -25°C to $+80^{\circ}\text{C}$
- Storage -55°C to $+85^{\circ}\text{C}$

Typical output variation over operating range: $-1.5\text{mv}/^{\circ}\text{C}$ (at rated load)

PHYSICAL SPECIFICATIONS

DIMENSIONS:

- PR-30: 4-7/16" overall (plus clearance for cord and connectors) x 2 3/8" x 3 1/8"
- PR-30C: 4-3/16" (above chassis) x 2 3/8" x 3 1/8"

CONSTRUCTION:

Aluminum case with holes for ventilation and black anodize finish. Philbrick Gray front panel with white symbols.

MOUNTING:

- PR-30 mounts on bench top
- PR-30C mounts on chassis — secured by 4 No. 8-32 projecting screws on 1 3/4" x 2 1/2" centers. Mates with 26-4200-8S Blue Ribbon connector, normally supplied.

WEIGHT:

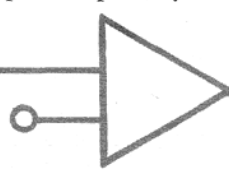
- Installed: 20 oz.
- Packed: 2 lbs.

REGULATOR: Philbrick dual regulator Model TR-30, non-tracking, symmetrical (available separately).

PHILBRICK MODEL PR-30
REGULATED DUAL POWER SUPPLY

ISSUE DATE
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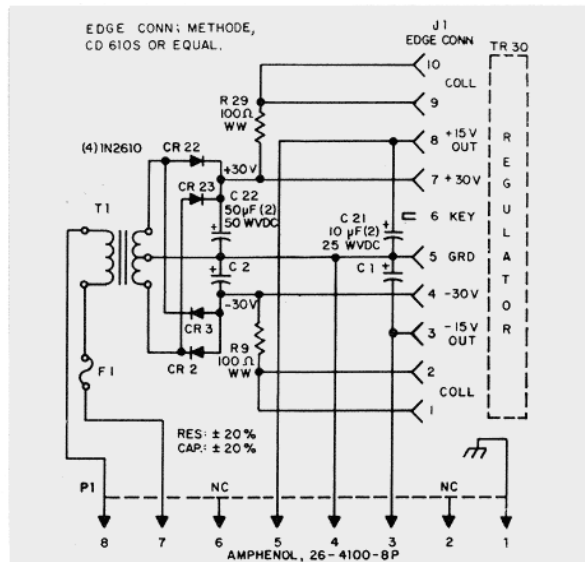


The PR-30's short circuit current is limited to about 200 milliamperes from either side. This can be sustained indefinitely without harm to the regulator, but the transformer will overheat if severe overloads are prolonged. Consequently, the PR-30 is supplied with a primary fuse that blows when the input current exceeds about 100 ma. After severe overloads, the output will drift somewhat until thermal equilibrium is regained.

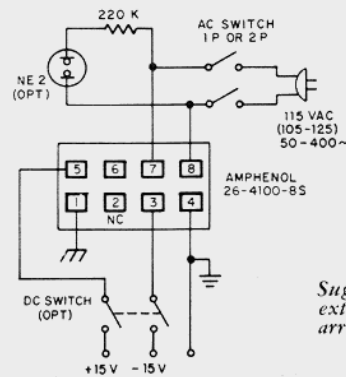
For increased reliability, adjustments have been omitted. Each power supply is trimmed at the factory to within 1% of nominal output rating at 115 volts, room temperature, and rated load. Output voltage should change by no more than 50 millivolts per year, without necessarily accumulating.

Model PR-30 — the bench unit — is equipped with a standard 115-volt line cord and plug, 1/10 amp slo-blo fuse, power switch, pilot light, and set of output binding posts. Two spare fuses are provided with each unit.

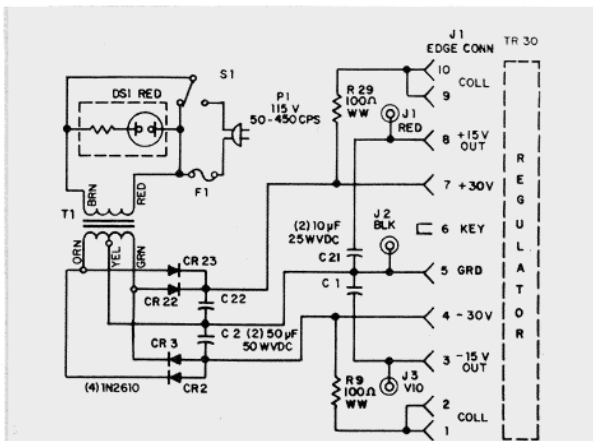
Model PR-30C — the chassis unit — is equipped with an 8-terminal Blue Ribbon plug, four threaded mounting lugs, and a top plate which has fuse and identifying markings. Switches and pilot lights can be supplied by the user externally to the power supply.



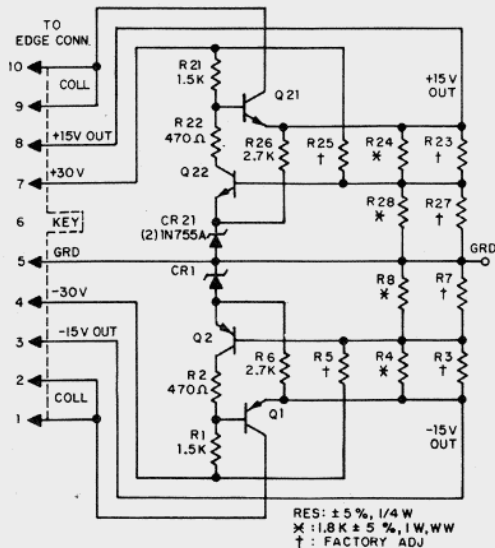
Schematic, Model PR-30C



Suggested external arrangement

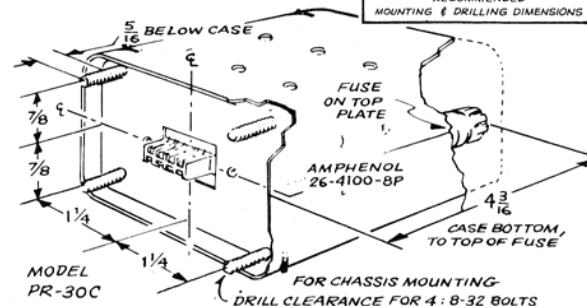
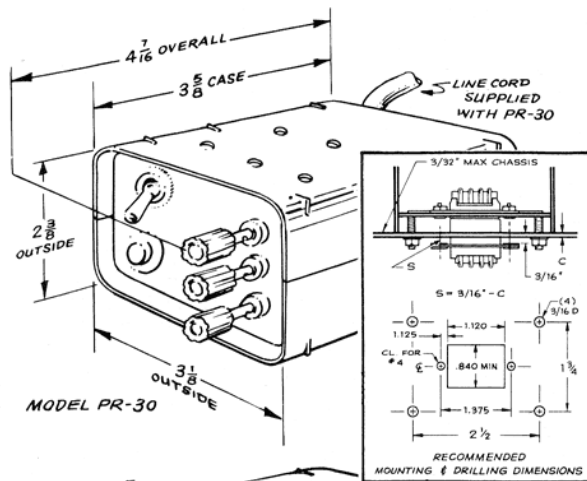


Schematic, Model PR-30



NOTE: EDGE CONN; METHODE, CD 610S OR EQUAL

Schematic, Model TR-30



Dimensions & Mounting Arrangement