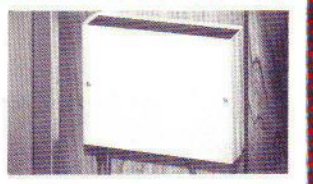
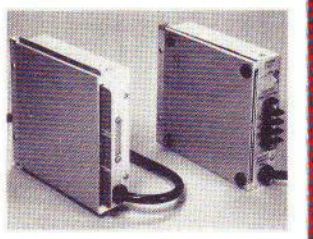
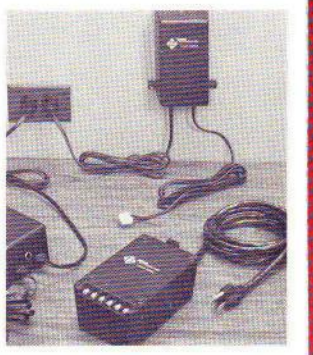
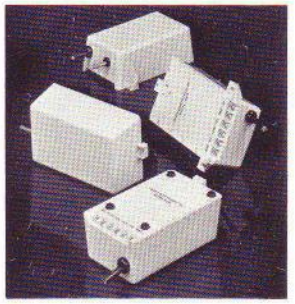
more
james
ideas

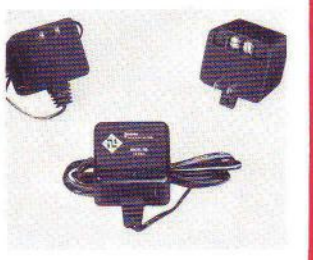








POWER
SUPPLY
manual



james ELECTRONICS

ISSUE III

James
ELECTRONICS
4050 North Rockwell St. • Chicago, Illinois 60618
Phone: (773) 463-6500 • Fax: (773) 463-1504

EXTERNAL AND MODULAR POWER SUPPLIES

COMPACT...EFFICIENT...RELIABLE

JAMES manufactures a wide variety of power supplies in external and modular packages. This catalogue describes standard models with a wide variety of output characteristics and power capacities. Telecommunications, data processing, industrial and commercial equipment are typical applications for JAMES power supplies.

These designs are all compatible with U.L., C.S.A., and F.C.C. requirements, and a majority are approved by these agencies. Agency approval of external power supplies can many times simplify the need for approvals of the equipment to be powered.

External power supplies can be furnished with a wide variety of output connections including screw terminals and cables with various male and female connectors.

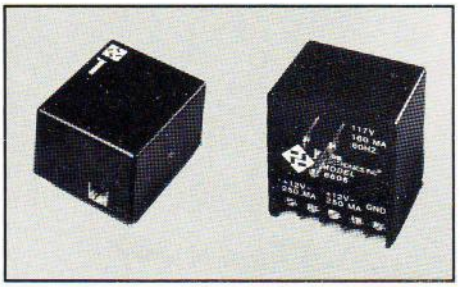
Reliability is the key consideration in the design, selection of components and manufacturing of JAMES power supplies. A complete MIL-Standard quality control system is used in the production process.

JAMES ELECTRONICS operates three manufacturing plants which are equipped with the most modern assembly and test systems. These systems insure a cost-effective, quality, and on-time product.

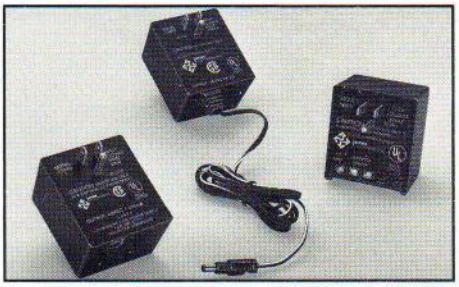
JAMES Power Supplies are warranted to be free of defects in material and labor for one year from the date of factory shipment. This warranty covers only the power supply when operated within the published specifications.

We manufacture models to European and other world power input requirements. T.Ü.V., V.D.E., and B.A.B.T. approvals can be secured.

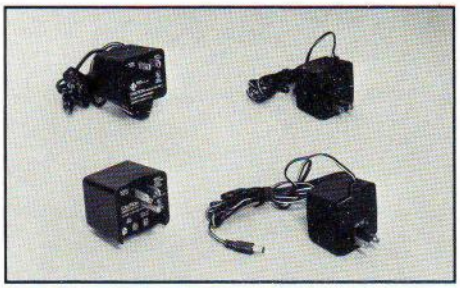
JAMES solicits inquiries for special customized models to meet equipment designer's requirements.



EXTERNAL D.C. REGULATED POWER SUPPLIES, 5-50 WATTS Pages 2-3-4



EXTERNAL D.C. UNREGULATED POWER SUPPLIES, 3-50 WATTS Pages 5-6-7-8



EXTERNAL A.C. POWER SUPPLIES, 4-60 WATTS Pages 9-10-11-12

MODULAR POWER SUPPLIES, Pages 13-14

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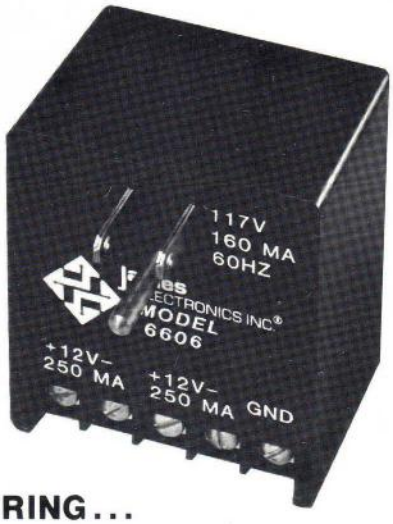
EXTERNAL D.C. REGULATED POWER SUPPLIES

5 TO 50 WATTS



FEATURING . . .

- Regulated D.C. power output
- Single and multiple outputs from 5 to 48 volts
- Plug-in, floor and wall mount packages
- Terminal, cable and modular jack outputs
- Designed to meet U.L. and C.S.A.

JAMES regulated power supplies are available in a wide range of external packages. The D.C. output(s) are fully regulated for direct power to all types of electronic circuits.

The normal power input is 120 volts at 60 Hz. Special models can be supplied to operate from power inputs from 90 to 260 volts at 50/60 Hz. Models are available that directly plug into standard A.C. sockets or have power cords and plugs. Special designs can be furnished with IEC input sockets and primary switching.

The regulators provide full fold back protection from output overload or direct shorts. Removal of the abnormal condition allows the supply to return to normal operation.

Cases are high impact plastic and meet UL 94V0 flame retardant specifications. All models are designed to meet U.L. and C.S.A. requirements and the majority carry this approval. Special designs can be supplied to meet V.D.E. and B.A.B.T. requirements.

Computer boards, terminals and modems can be powered by PLUG-PACKS. Multiple output models have the 12 and 5 volts normally required for such systems.

JAMES solicits inquiries for special customized models to meet equipment designer's requirements.

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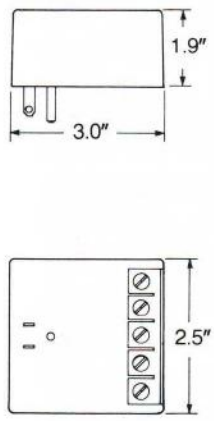
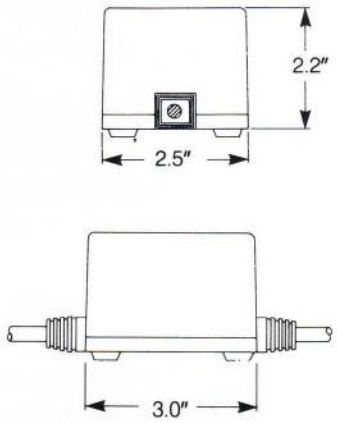
EXTERNAL D.C. REGULATED POWER SUPPLIES

3 TO 15 WATTS

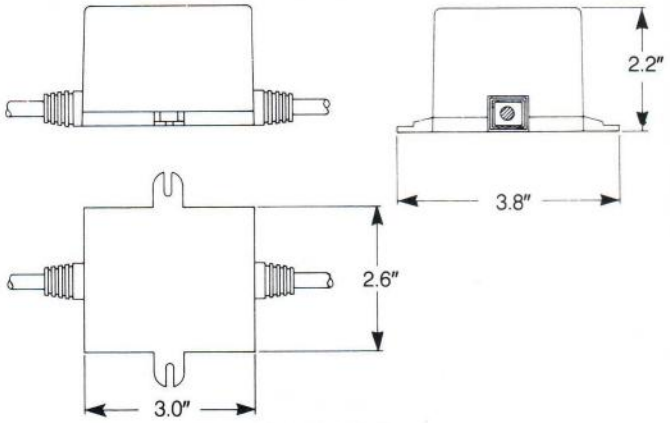
OUTPUT	L CASE	Q CASE	QT CASE
5V @ .6A	6601	6673	6684
5V @ 1A	6678	6667	6647
5V @ 2A*	8622	8617	8610
± 12V @ .2A	6606	6670	6681
12V @ .5A	6602	6675	6686
15V @ .4A	6603	6676	6687
24V @ .25A	6604	6677	6688
24V @ .50A	8621	8616	8609
48V @ .1A	6605	6679	6690
48V @ .25A	8620	8615	8608
5V @ .4A; 12V @ .25A	6609	6671	6682
5V @ .5A; ± 12V @ .1A	6613	6672	6683



L CASE



Q CASE



QT CASE

Input:	105 - 130VAC 60 Hz, Plug in 3 prong ("L"), 6 ft., 3 prong; NEMA 5-15 (Q-QT)
Output:	D.C. Voltage ± 5%, Regulation ± 2%, Ripple 10 mV RMS Max
Case Color:	Black Std, other colors available.
Operating Temp.:	0 to 40 degrees C
Output Polarity:	D.C. Floating
A.C. Ground:	Carried through
Output Terminations:	-001 Terminals (#6 Screw, #16 AWG), ("L" Case Only) -002 6 ft. cable, -003 Telephone modular — RJ-11 A wide variety of connector terminations available.

10 to 50 WATTS

The higher powered models include both switching and linear designs. All have regulated DC output and meet FCC Part 15, Subpart J, Class A. All designs meet safety requirements of UL, CSA and where applicable VDE/TUV. Linear models can be supplied with 207-254 VAC 50 Hz input.

LINEAR MODELS

Input Voltage: 105-130 VAC, 60 Hz, 6 ft. 3 prong NEMA 5-15 plug.
Output Voltage: ±5% Regulation ±2%
Ripple 10 mV RMS max

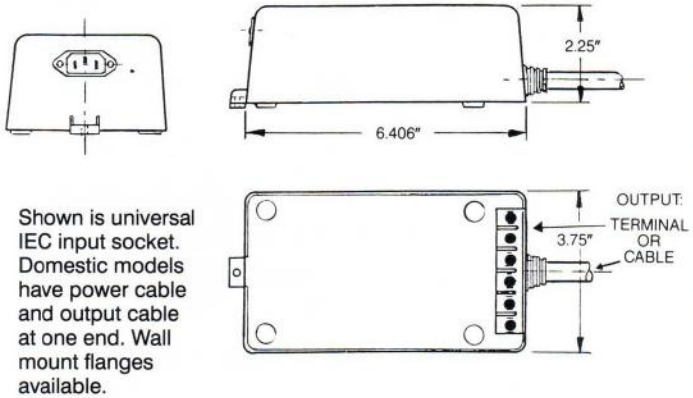
OUTPUT VOLTAGE	F CASE	M CASE
5V @ 1.8A		6755
12V @ 1.2A		6756
24V @ 750mA		6757
24V @ 1A	6461	
48V @ 375mA		6758
48V @ 500mA	6465	
5V @ 1A ± 12V @ .2A		6759

SWITCHING MODELS "F" CASE

Input Voltage: 95-250 VAC 50/60 Hz IEC 320 Input
Output Voltage: ±5% Regulation ±2%
Ripple 10 mV RMS max
Minimum Power Output 8 Watts

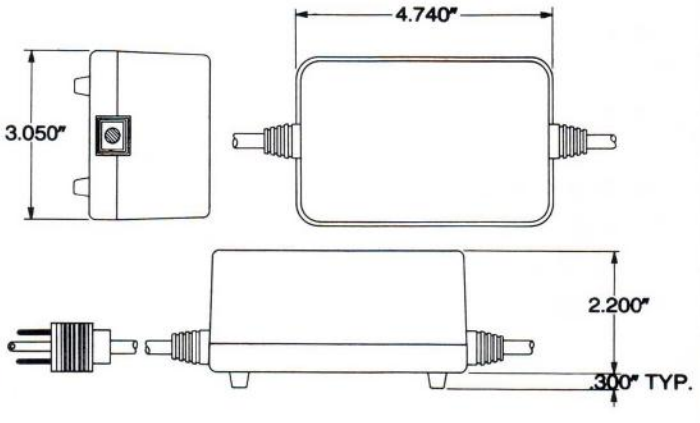
OUTPUT VOLTAGE	30 WATT		50 WATT	
5V @	5A	7091	—	—
12V @	2.5A	7092	4A	7095
24V @	1.25A	7093	2A	7096
48V @	.7A	7094	1A	7097
5V±12V	5V@3A ±12V@.5A	7098	+5V@3.5A ±12V@1A	7099

MECHANICAL SPECIFICATIONS



Shown is universal IEC input socket. Domestic models have power cable and output cable at one end. Wall mount flanges available.

F Case



M CASE

Cases-Plastic-Meet UL94VO-Black Std. Color
Temperature – 0-40 °C

Output Terminations -.001 #6 Screws (Not in "M")
-002 6 ft. cable, various connectors available.

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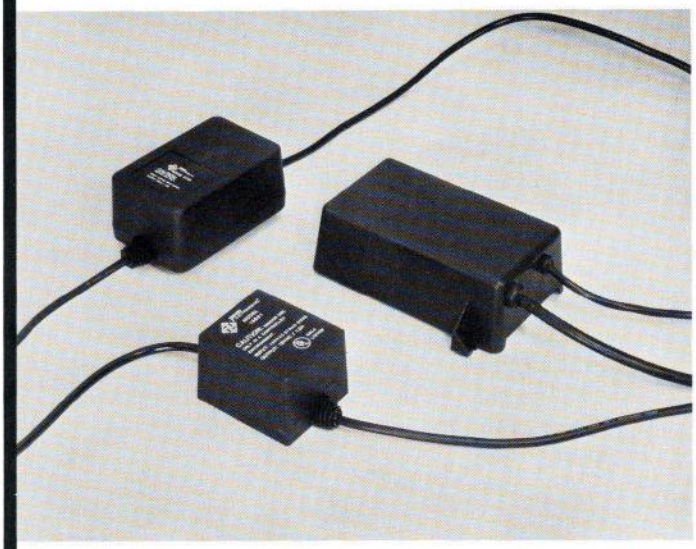
EXTERNAL D.C. UNREGULATED POWER SUPPLIES

10 TO 50 WATTS



JAMES unregulated D.C. power supplies in external packages are widely used to power telephone, fiber optics, computer, instrument and consumer equipment. They are used to supply board regulation and multiple D.C. to D.C. conversions. All of these models are of reliable low noise linear design.

The reduction of voltage from power line levels to the lower voltages common to electronic equipment permits in many applications the avoidance of safety approvals. JAMES products are all built to meet U.L., C.S.A., and F.C.C. standards and in the majority of models are agency approved.

The models in this catalogue are intended for 120 Volt, 60 Hz applications. We do supply equivalent models with power inputs from 90 to 240 Volts at 50/60 Hz. These are also designed for European safety standards.

Input power cords or direct plug-ins are designed to match North American 3 prong NEMA 5-15 sockets. IEC receptacles or cords with international power plugs can be supplied.

Special circuits can be supplied to cut off voltages between nominal and maximum as required. This can also be used to limit the no load output voltage.

JAMES also solicits customer requirements.

FEATURING . . .

- Unregulated and filtered D.C. outputs from 8 to 48 Volts
- Power outputs to 50 Watts
- Plug-in, floor and wall mount packages
- Available outputs:
  -001 Terminals (L Case only)
  -002 6 foot cable
  -003 Modular jack
- Designed to meet U.L. and C.S.A.

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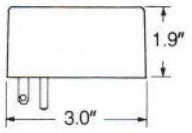
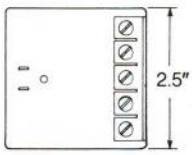
EXTERNAL D.C. UNREGULATED POWER SUPPLIES

10 TO 50 WATTS

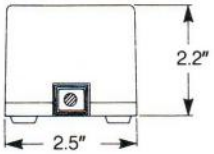
OUTPUT	L CASE	Q CASE	QT CASE
8V @ 1.0A	13931	13935	13939
12V @ 1.0A	13897	13893	13882
16V @ .7A	13932	13936	13940
20V @ .55A	13933	13937	13941
28V @ .4A	13934	13938	13942
34V @ .3A	13958		
48V @ .2A	13943		
8V @ 1.5A	13661	13665	13669
12V @ 1.2A	13682	13683	13684
16V @ .9A	13662	13666	13670
20V @ .8A	13663	13667	13671
28V @ .57A	13664	13668	13672

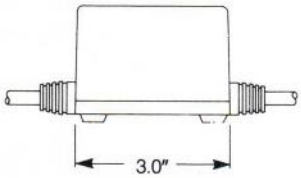
	M CASE
8V @ 5.0A	13630
12V @ 3.5A	13631
16V @ 2.75A	13632
20V @ 2.25A	13633
28V @ 1.6A	13634
48V @ 1.0A	13635



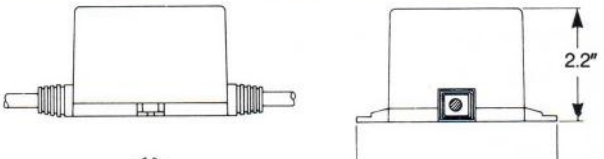


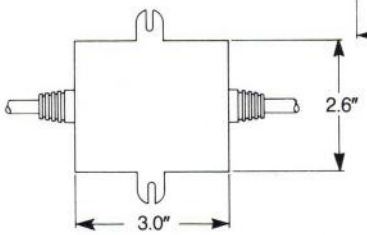
L CASE



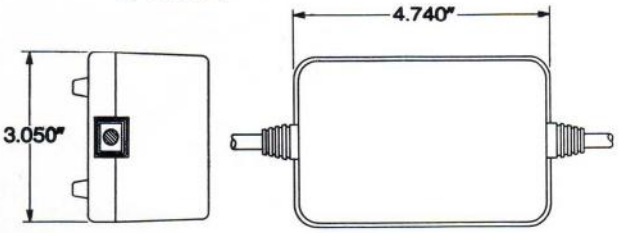


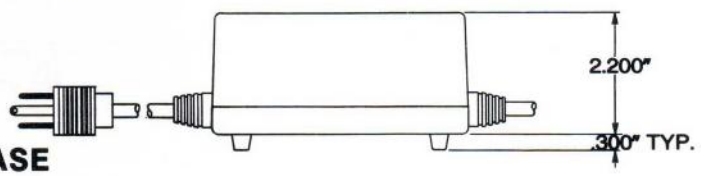
Q CASE





QT CASE





M CASE

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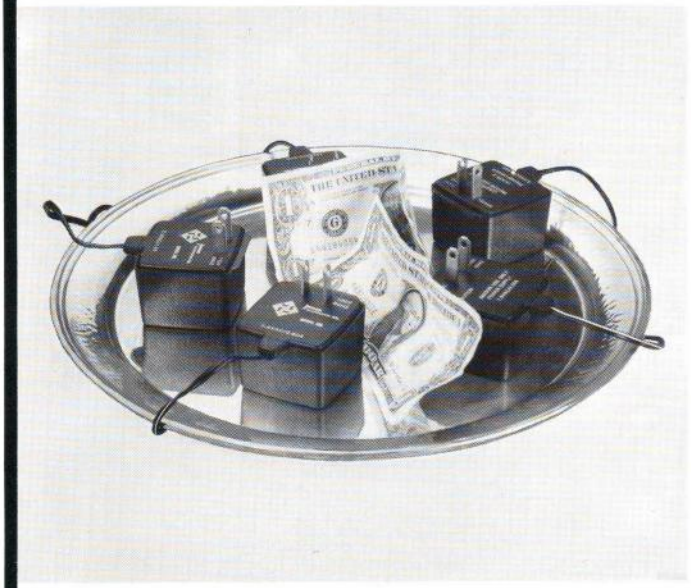
EXTERNAL D.C. UNREGULATED POWER SUPPLIES

3 TO 8 WATTS



JAMES D.C. External plug-in power supplies provide the industrial and consumer electronic design engineer with a compact and reliable power source. Standard models are available for a broad variety of output voltages and power capabilities.

They can provide primary low voltage D.C. power for a wide variety of equipment used in telecommunications, industrial and medical electronics. They can power battery charging systems or direct D.C. power for consumer products from hand held shavers to riding lawn mowers.

The American production facilities of JAMES ELECTRONICS incorporate the largest number of privately operated computer winding machines to provide competitive prices and on-time delivery.

Quality is assured through statistical process control applied throughout the production process to supply a trouble free product to the end user.

We offer special custom designs to meet the special requirements of the European, Japanese, and Australian markets.

FEATURING . . .

- Plug-in models with power outputs from 3 to 8 Watts
- D.C. output voltages from 2.3 to 30 Volts
- Models for telecommunications, industrial, instrument and medical applications
- D.C. power for consumer products
- Advanced high efficiency designs using full wave rectification and electrolytic filtering
- A wide variety of terminations are available from screw terminals to various cable and connector systems
- All standard models designed to meet U.L. and C.S.A.

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D.C. UNREGULATED SPECIFICATIONS

3 WATT MODELS

OUTPUT	CASE	MODEL
2.3V @ 700mA	S	19101
6.0V @ 375mA	S	19102
7.5V @ 320mA	S	19103
9.0V @ 260mA	S	19104
12.0V @ 200mA	S	19105
16.0V @ 150mA	S	19106
20.0V @ 120mA	S	19107
24.0V @ 100mA	S	19108
30.0V @ 80mA	S	19109

5 WATT MODELS

OUTPUT	CASE	MODEL
6.0V @ 800mA	AU	14311
7.5V @ 650mA	AU	14312
9.0V @ 540mA	AU	14313
12.0V @ 400mA	AU	14314
16.0V @ 300mA	AU	14315
20.0V @ 250mA	AU	14316
24.0V @ 200mA	AU	14317

8 WATT MODELS

OUTPUT	CASE	MODEL
6.0V @ 1.25A	AU	14321
7.5V @ 1.00A	AU	14322
9.0V @ 830mA	AU	14323
12.0V @ 625mA	AU	14324
14.0V @ 550mA	AU	14336
16.0V @ 500mA	AU	14325
20.0V @ 400mA	AU	14326
24.0V @ 310mA	AU	14327

BATTERY CHARGERS

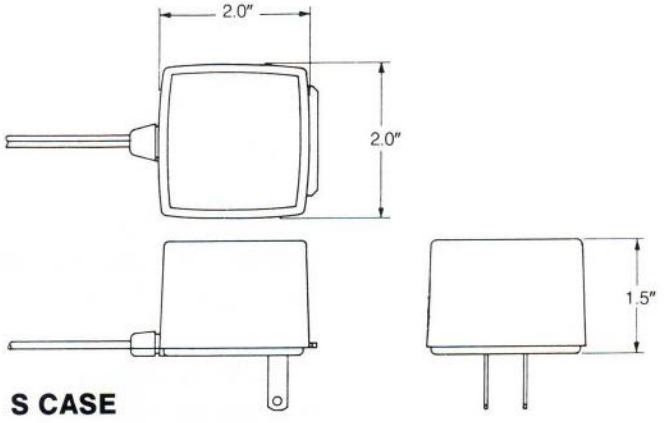
Battery charger models are available in all power sizes and can be customized to the user's battery system.

Input Voltage: 120V ± 10%, 60 Hz

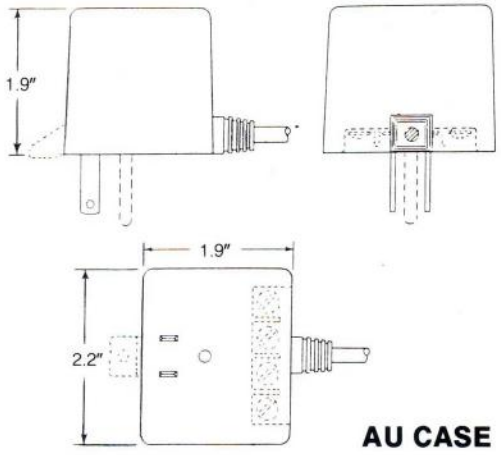
Output Voltage: Listed at full resistive load, ± 5% at 120V input

Temperature: 0 to 50 degrees C

Standard models are energy limiting. Thermal fuse and cutout protection are available at extra cost.



S CASE



AU CASE

Available outputs: -001 Terminals (#6 Screw, #16 AWG); not available in S case.
-002 6 Foot cable.
-XXX A wide variety of connector terminations are available.

A primary ground pin and/or mounting tabs can be supplied on the AU case for domestic use.

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EXTERNAL A.C. POWER SUPPLIES

12 TO 60 WATTS

FEATURING...

- External A.C. power to 60 Watts
- Plug-In, floor and wall mount packages
- Designed to meet U.L. and C.S.A.
- Terminal, cable and modular jack outputs

JAMES EXTERNAL A.C. POWER isolates sensitive electronic equipment in computers, telecommunication equipment and industrial controls from hazardous power line voltages, eliminates power conversion heat from electronic assemblies, reduces size and weight of the product, and may permit modifications in the product without resubmission to U.L. or C.S.A.

Models are available from 8 to 60 volts and in power capacity up to 60 watts. The compact, high efficiency transformers are designed for 120 volts ± 10% at 60 Hz. Models are available for 240 volt at 50 Hz operation and meet V.D.E. and B.A.B.T. specifications. Output voltage regulation is ± 10% over line and load variation. Ambient operating temperature is 0 to 50 degrees C.

Three standard outputs are available: terminals on the case, a 6 foot cable, or a telephone modular jack. Power ground is carried through to the output.

PLUG-PACK power supplies with low voltage outputs isolate the electronic equipment from the power lines. All models are designed to meet U.L. and C.S.A. requirements. The cases are fully sealed and have high impact, flame retardant plastic.

Plug-Pack power supplies are designed with conservatively rated components and assembled under MIL-standard quality control procedures.

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A.C. TO A.C. SPECIFICATIONS

16 WATT MODELS

OUTPUT	L CASE	Q CASE	QT CASE
8V @ 2.0 A	13991	15860	15869
10V @ 1.6 A	13992	15861	15870
12V @ 1.3 A	13993	15862	15871
14V @ 1.1 A	13994	15863	15872
18V @ 800mA	13995	15864	15873
24V @ 600mA	13996	15865	15874
28V @ 500mA	13997	15866	15875
48V @ 300mA	13998	15867	15876
60V @ 200mA	13999	15868	15877

24 WATT MODELS

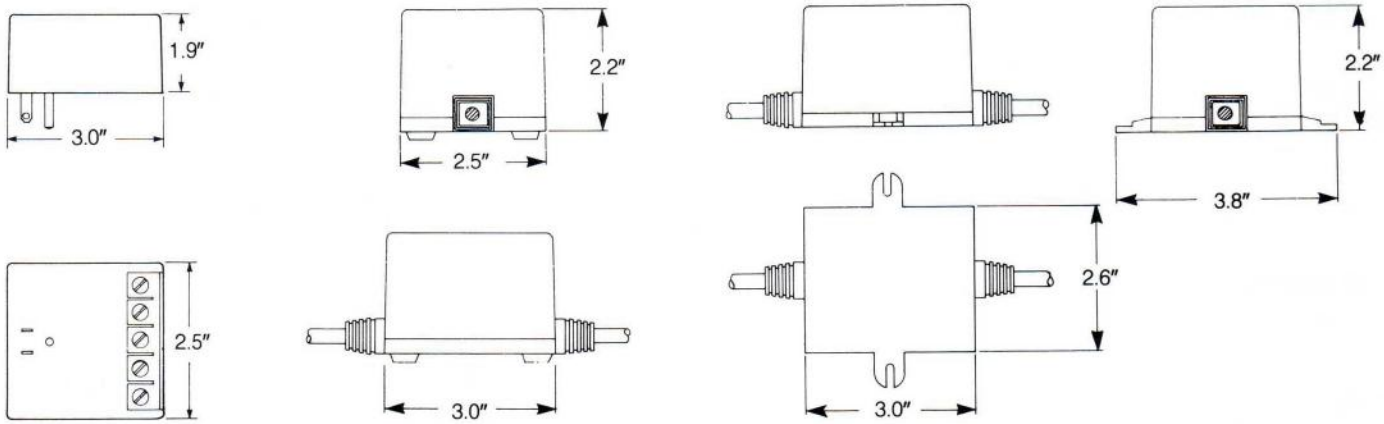
OUTPUT	L CASE	Q CASE	QT CASE
8V @ 2.7 A	13962	15878	15887
10V @ 2.2 A	13963	15879	15888
12V @ 1.8 A	13964	15880	15889
14V @ 1.5 A	13965	15881	15890
18V @ 1.3 A	13966	15882	15891
24V @ 1.0 A	13967	15883	15892
28V @ 800mA	13968	15884	15893
48V @ 500mA	13969	15885	15894
60V @ 400mA	13970	15886	15895

40 WATT MODELS

OUTPUT	L CASE	Q CASE	QT CASE
8V @ 5.0 A	15686	15800	15801
15V @ 2.5 A	15682	15804	15805
24V @ 1.6 A	15684	15812	15813
28V @ 1.3 A	15687	15808	15809

60 WATT MODELS

OUTPUT	L CASE	Q CASE	QT CASE
8V @ 7.0 A		15802	15803
15V @ 3.7 A		15806	15807
24V @ 2.5 A		15816	15817
28V @ 2.0 A		15810	15811



L CASE **Q CASE** **QT CASE**

"L" case available outputs: -001 Terminals (#6 Screw, #16 AWG)
-002 6 Foot cable
-003 Modular jack

"Q" and "QT" available outputs: -002 6 Foot cable
-003 Modular jack

Note: Connectors can be supplied to customer specifications for cable terminations.

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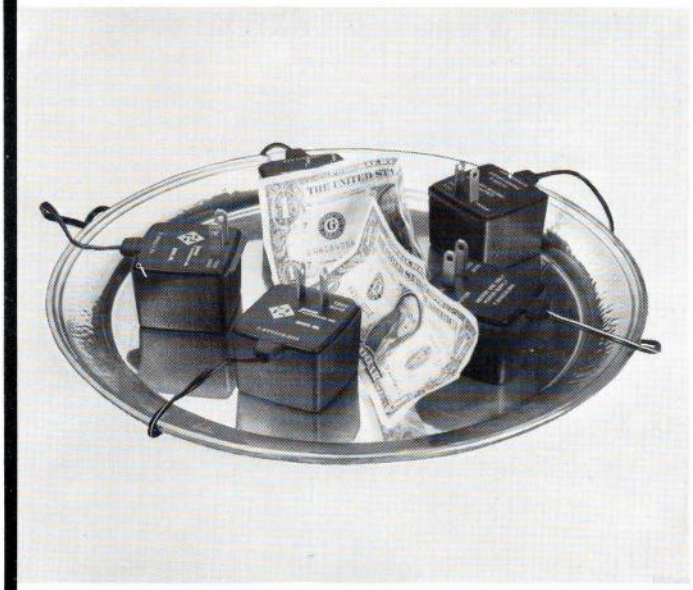
EXTERNAL A.C. POWER SUPPLIES

4 TO 16 WATTS



JAMES A.C. External plug-in power supplies provide the industrial and consumer electronic design engineer with a compact and reliable power source. Standard models are available for a broad variety of output voltages and power capabilities.

They can provide primary low voltage A.C. power for a wide variety of equipment used in telecommunications, industrial and medical electronics. They can power battery charging systems or direct A.C. power for consumer products from hand held shavers to riding lawn mowers.

The American production facilities of JAMES ELECTRONICS incorporate the largest number of privately operated computer winding machines to provide competitive prices and on-time delivery.

Quality is insured through statistical process control applied throughout the production process to supply a trouble free product to the end user.

We offer special custom designs to meet the special requirements of the European, Japanese, and Australian markets.

FEATURING . . .

- Plug-in models with power outputs from 4 to 16 Watts
- A.C. output voltages from 2.3 to 30 Volts
- Models for telecommunications, industrial, instrument and medical applications
- A.C. power for consumer products
- Advanced high efficiency designs
- A wide variety of terminations are available from screw terminals to various cable and connector systems
- All standard models designed to meet U.L. and C.S.A.

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A.C. TO A.C. SPECIFICATIONS

4 WATT MODELS

OUTPUT	CASE	MODEL
2.3V @ 1.7 A	S	19001
6.0V @ 660mA	S	19002
7.5V @ 500mA	S	19003
9.0V @ 400mA	S	19004
12.0V @ 300mA	S	19005
16.0V @ 250mA	S	19006
20.0V @ 200mA	S	19007
24.0V @ 170mA	S	19008
30.0V @ 130mA	S	19009

6 WATT MODELS

OUTPUT	CASE	MODEL
7.5V @ 800mA	AU	14212
9.0V @ 650mA	AU	14213
12.0V @ 500mA	AU	14214
16.0V @ 375mA	AU	14215
20.0V @ 300mA	AU	14216
24.0V @ 250mA	AU	14217

10 WATT MODELS

OUTPUT	CASE	MODEL
7.5V @ 1.4 A	AU	14222
9.0V @ 1.1 A	AU	14223
12.0V @ 875mA	AU	14224
16.0V @ 650mA	AU	14225
20.0V @ 500mA	AU	14226
24.0V @ 450mA	AU	14227

16 WATT MODELS

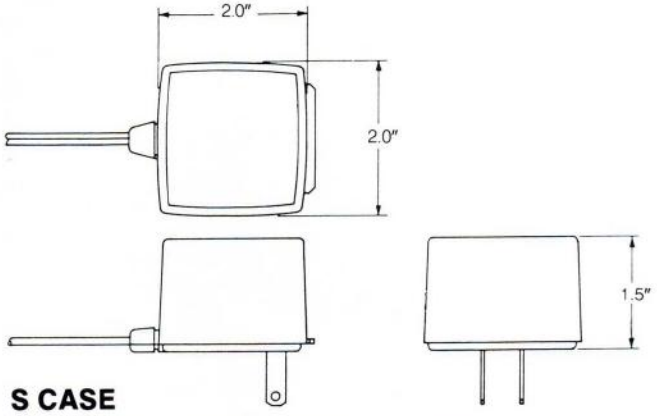
OUTPUT	CASE	MODEL
7.5V @ 2.1 A	AU	14200
9.0V @ 1.7 A	AU	14201
10.0V @ 1.6 A	AU	14207
12.0V @ 1.3 A	AU	14202
14.0V @ 1.1 A	AU	14208
16.0V @ 1.0 A	AU	14203
18.0V @ 800mA	AU	14209
20.0V @ 800mA	AU	14204
24.0V @ 600mA	AU	14205
28.0V @ 500mA	AU	14206

Input Voltage: 120V ± 10%, 60 Hz

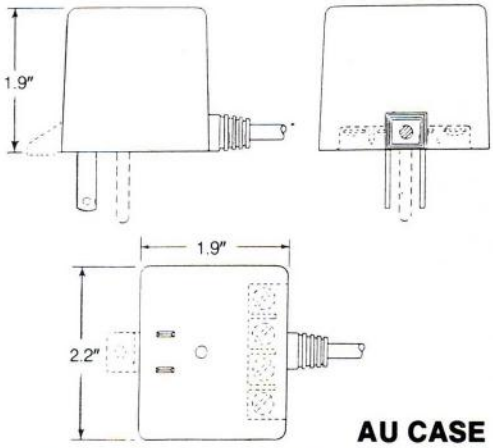
Output Voltage: Listed at full resistive load, ± 5% at 120V input

Temperature: 0 to 50 degrees C

Standard models are energy limiting. Thermal fuse and cutout protection are available at extra cost.



S CASE



AU CASE

Available outputs: -001 Terminals (#6 Screw, #16 AWG); not available in S case.
-002 6 Foot cable.
-XXX A wide variety of connector terminations are available.

A primary ground pin (standard on 16 Watt models) and/or mounting tabs can be supplied on the AU case for domestic use.

Custom markings can be supplied at nominal cost.

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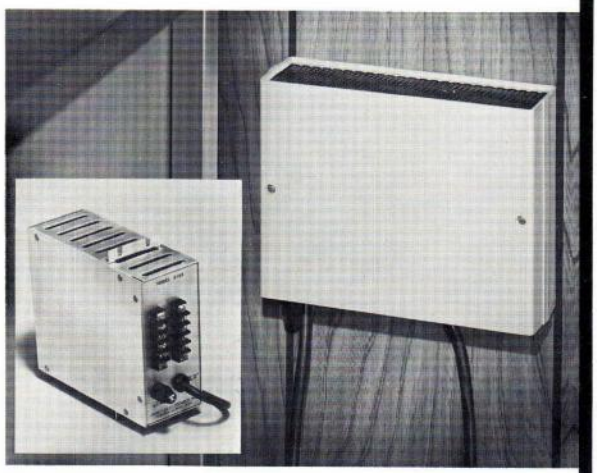
JAMES MODULAR POWER SUPPLIES

JAMES MODULAR power supplies are designed for long reliable life in telecommunications, computer and industrial applications. They incoporate state of the art design with quality components. Manufactured in North America with quality processing procedures, including burn in to insure extended MTBF.

We offer standard models but encourage inquiries for special custom requirements for both output, input and mounting. All designs are applicable to U.L., C.S.A., F.C.C. and Belcore standards. Many are U.L. recognized.



STATION LINEAR POWER SUPPLIES FOR TELEPHONE SYSTEMS, (10 TO 60 WATTS).

MODEL 6183, Wall mount, 48V D.C. @ .5A plus ringer circuit

MODEL 6193, KTU mounting, 48V D.C. @ .5A plus ringer circuit

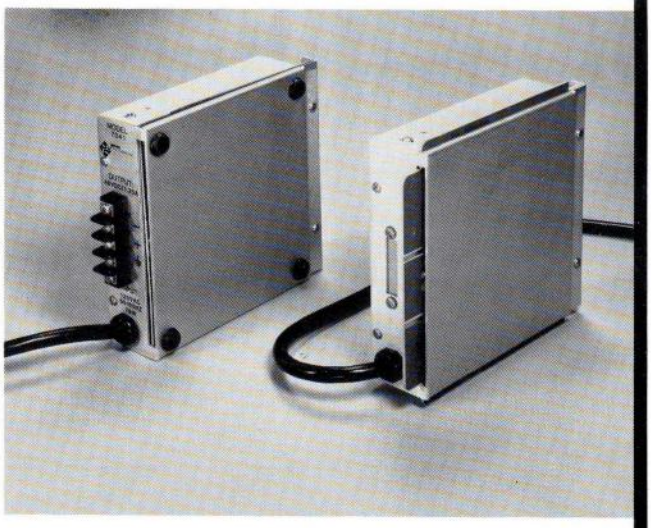
MODEL 6198, KTU mounting, 48V D.C. @ 1.25A

MODEL 6196, KTU mounting, 5 Watt 20/30 Hz ringer with ringer timing circuit

*MODEL 6700, Wall mount, 24V @ 2.5A, 12V D.C. @ 2.5A

These power supplies incorporate long life linear design with multiple regulated outputs and excellent low noise filtering. Packages include KTU rack mounting, wall and floor mounting. All are designed to U.L., C.S.A. and F.C.C. standards.

*Unregulated



48 VOLT D.C. TELECOMMUNICATIONS, SWITCHING MODULAR POWER SUPPLIES, (60 TO 110 WATTS).

MODEL 7042, 24V D.C. @ 2.5A

MODEL 7041, 48V D.C. @ 1.25A

MODEL 7050, 48V D.C. @ 2.0A

MODEL 7051, 48V D.C. @ 1.5A and 24V D.C. @ 2.5A Switchable

These designs are for use in standard telphone racks including "400", KTU, as well as bracket wall mounts. Outputs include screw terminals, PC rack insertion, and cable. The above are typical standard models. Detailed specifications are available upon request.

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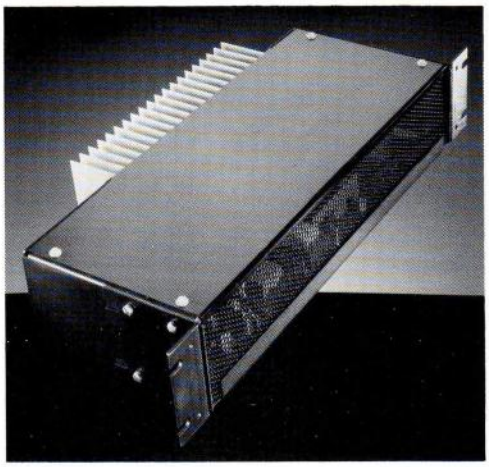
JAMES MODULAR POWER SUPPLIES

48 VOLT D.C., 480 WATT, RACK MOUNTING STATION POWER SUPPLY.



The model 7080 is the most compact rack power supply in this power rating. Incorporating greater than 80% efficiency, 100 Khz FET circuitry, it requires only 3.5 inches of rack space. Power input is selectable for 120 or 240V, 60 Hz. This power supply has excellent input and output filtering and is rapidly becoming the industry standard for remote station and customer installations.

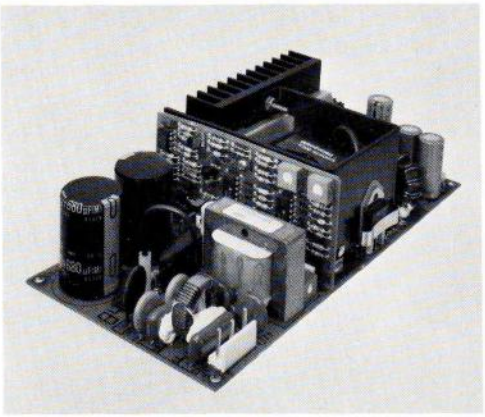
D.C. TO D.C. CONVERTERS, (25 TO 50 WATTS).

JAMES converters are designed for telecommunications service to convert 48 volt power to single and multiple solid state voltages from 5 to 15 volts. The designs incorporate compact 100 Khz circuitry, which can be supplied in a number of electrical and package designs.

60 WATT TRIPLE OUTPUT SWITCHING POWER SUPPLIES.

The model 7070 in a 60 cubic inch package provides the OEM manufacturer with the most efficient and lightest power supply on the market. The standard 3 rail design incorporates 100 Khz technology, excellent filtering and reliability. It is U.L. 478 recognized and conforms to F.C.C. 20780. Output is ± 5VDC @ 5A, ± 12DC @ 1A.

This power supply is now used in a wide range of industrial, communications, and commercial equipment. A floor/wall mount package is available.



110 WATT TRIPLE OUTPUT SWITCHING POWER SUPPLIES.

The model 7065 delivers 110 Watts of 5 Volt and ± 12 Volt for a wide range of industrial applications. The 100 Khz FET technology and excellent filtering are assembled on an easy to mount board for OEM equipment installation. It is a cost effective high reliability design for industrial use.