

Since 1957

# Power Supply Catalog **2010**

We make Power Supplies in Every voltage from 0 volts to 30kV

AC-DC and DC-DC

3 Day Shipping Guarantees

Linear, Switching, Unregulated

**5 Year Warranties** 

Order Factory Direct

WISA SEPTIMENT OF THE U.S.A.



# Celebrating 50 Years of Excellence



Sarkis Acopian

Having come to the United States as an immigrant in the mid 1940s, Sarkis Acopian, founder of Acopian Technical Company, attended Lafayette College in Easton, PA. During his time at Lafayette, he was called to serve in the U.S. Army. After being honorably discharged and returning to Lafayette, he graduated in 1951, earning a bachelor's degree in mechanical engineering. After graduation, Mr. Acopian was employed by Weller Electric Corp., where he designed a power sander and a soldering gun that became two of its main products. With just a small loan to start his own company and achieve his share of the American dream, he began by designing and

manufacturing the first ever solar radio, a milestone of 1957 technology. The Acopian Solar Radio was promoted as 'Revolutionary – No Batteries or Outside Electrical Plug-ins – Uses light for its source of energy.'

When Mr. Acopian needed some power supplies and couldn't obtain them quickly, he made them himself, and – realizing that other engineers were experiencing the same problem – began to advertise them for sale. Soon, Acopian was building and shipping power supplies very quickly. This evolved into our 3 Day shipping policy – "up to 5 pieces of any power supply is guaranteed to ship within 3 Days after receipt of order." As the power supply line grew, larger and more complicated power supplies were introduced, but the same philosophy was followed for these larger supplies – "up to 2 pieces of these would ship within 9 days after receipt of order." We still pride ourselves on this remarkable ability. To this day, none of our competitors can consistently match our shipping promise dates.

Mr. Acopian, an industrialist, environmentalist and humanitarian, has displayed extraordinary generosity to international, national and local non-profit agencies throughout his lifetime. His interest in ornithology resulted in establishing the Birds of Armenia Project, whose primary goal was to stimulate environmental awareness and establish a conservation ethic among the citizenry of Armenia.

Mr. Acopian's passion for higher education and the sciences is seen in his many philanthropic endeavors, which have included the Acopian Engineering Center at Lafayette College, the Acopian Center for Conservation Learning at Hawk Mountain Sanctuary and the Acopian Center for Ornithology at Muhlenberg College, as well as his endowing of the environmental education programs at the American University of Armenia and the Florida Institute of Technology. His great sense of gratitude to his adopted country played a major part in his being the largest individual donor to the World War II Memorial in Washington, DC.

In celebrating its 50<sup>th</sup> anniversary, Continues to develop new lines of power supplies for the constantly changing needs of industry. But what will never change is our commitment to serving our valued customers with quality products, our 3-Day shipping guarantee and unsurpassed customer service.









# Acopian Promises to Ship Within Three Days

#### **Lawrence Berkeley National Laboratory**

"Whenever I need a power supply for any project, I always check Acopian first. Your customer service is first rate, and I really like the fast, dependable shipping. The reliability of your products is an additional bonus – they seem to last forever."

Gudrun Kleist, Engineering Associate



... and we keep that promise. For more than 40 years, Acopian has been shipping AC to DC power modules within three days after receipt of an order. During this period, the Acopian line has expanded from the original Plug-in modules to a broad range of different types of power supplies. Our unique 3-day shipping guarantee has prompted many questions. Below are some of those most often asked:

### I've seen other power supply manufacturers advertise "same-day shipment." Isn't that better than 3-day shipment?

A typical vendor's "same-day shipment" advertisement can only be fulfilled if the power supplies you need are in stock. Otherwise, a four to six week delay is not unusual before inventory is replenished and your order is shipped.

Acopian's 3-day shipment promise applies to ALL 3 Day models (larger units ship within 9 Days) and is not dependent on the quantity in stock. We build each unit after the order for that unit is received. If an order is needed faster, often times we can ship in less than 3 days.

#### What does Acopian's 3-day shipping promise mean?

It means that power modules listed in this catalog are shipped within 3 days after we receive your order. High Voltage, Redundant, Rack Mounting, Systems and certain Switching power supplies are shipped within 9 days.

#### Do options affect shipping time?

The 230 volt input option and moisture/fungus-proofing option require two additional days. All other options do not affect shipping time.

Has Acopian ever failed to meet this promise? Never

### Is the 3-day promise affected by quantity? Suppose we need 50 or 100 pieces?

The 3-day promise applies to orders for five or less modules. (Two or less for 9-day items). If requested, Acopian will ship five pieces of a larger order in 3 days and, with consideration of your requirement, schedule the balance. (Since each shipment is processed and priced as a separate order, for lowest prices request shipment in one lot.)

## What if I need four or five different models? Does the 3-day promise still apply?

Yes. Guaranteed 3-day shipment applies to one model or to a combination of models.

#### Do I have to ask for 3-day shipment of my order?

3-day shipment is automatic. In fact, you must tell us if you want the shipment delayed.

#### How long after you ship will I have the power supplies?

Transportation time varies with the carrier used. Unless otherwise requested, Acopian ships small orders by UPS Ground.

## You say Acopian has never failed to meet the 3-day promise. How do you do it?

Our facilities have been designed and equipped to meet our 3-day shipment promise. When your order is received, your power supplies are built specifically for you and shipped within three days. We do not ship from stock. (For this reason, we are unable to accept returns for credit.)



# **Table of Contents**

**Customized Solutions to meet your needs** 

**PAGE** Acopian has been customizing power supplies and building Power Systems for over 48 years.

#### Shipped within 9 DAYS



#### **POWER SYSTEMS**

Try the convenient <u>Online System Builder</u> at www.acopian.com

Any combination of power supplies can be mounted in an assembly 

- with Screw Terminals

#### Shipped within 9 DAYS



#### **REDUNDANT POWER PACKAGES, AC-DC**

**RACK MOUNTING, WALL MOUNTING** 

Using two switching supplies ......20-21, 14-17

PLUGGABLE REDUNDANT SYSTEMS

**MODULAR REDUNDANT SYSTEMS** 

MINI ENCAPSULATED - PC Board Mounting

#### SWITCHING REGULATED, AC-DC

5-48 volts 0.65 - 10 amps 30 & 50 watt

(includes models with

Power Factor Correction and Universal Input)

> Mounting Kits (for wall mounting or DIN rail mounting) ......77

Shipped within 3 DAYS

Shipped

within

6 DAYS



NARROW PROFILE

3.3 - 125 volts 1.3 - 25 amps to 288 watts

Single output (to 288 watts) 411508 Listed option NEW!! with Power Factor Correction and Universal Input ...44-45 Mounting Kits (for wall mounting or DIN rail mounting) . . . . . . . . 91

Shipped within 9 DAYS



3.3 - 50 volts 15 - 70 amps to 720 watts

NEW! LOW PROFILE (with Power Factor Correction and Universal Input) Mounting Kits (for wall mounting or DIN rail mounting) . . . . . . . 91

Shipped within 9 DAYS



**GOLD BOX** 

3.3 - 48 volts 8 - 150 amps 325 - 1200 watts

Mounting Kits (for wall mounting or DIN rail mounting) . . . . . . . 91

#### DC-DC CONVERTERS, REGULATED



5-28 volts out 0.2-2.5 amps 6-15 watts

MINI ENCAPSULATED - PC Board Mounting 

MINI ENCAPSULATED - With Screw Terminals 

Shipped within 3 DAYS



18 - 350 Vdc in 3.3 - 125 Vdc out 1.3-25 amps to 288 watts

NARROW PROFILE

Mounting Kits (for wall mounting or DIN rail mounting) ......91

To 30 kV

#### HIGH VOLTAGE REGULATED, AC-DC & DC-DC

Shipped within... 6 DAYS ...9 DAYS



0-30 kV 1-60 mA 30-60 watts **MODULAR** 

Mounting Kits (for wall mounting or DIN rail mounting) . . . . . 91

**RACK MOUNTING** 

LINEAR REGULATED, AC-DC	MINI ENCAPSULATED - PC Board Mounting Single output
Shipped within 3 DAYS  Shipped  2 1-75 volts 0.02-2.5 amp 0.25-15 watts	Dual output
Shipped within 3 DAYS  Shipped within 2-38 watts	NARROW PROFILE  Single output
Shipped within 3 DAYS  { 0-200 volts 0.1-32 amps 0.6-450 watts	Single output
Shipped within 3 DAYS  { 1-200 volts 0.02-5 amps 0.1-60 watts}	PLUG-IN           Single output         .84-85           Dual output         .86-88           Wide Adjust output         .84-85           MIL tested         .81           Sockets         .81           Solder terminals (optional)         .84-88
Shipped within 9 DAYS  { 0-150 volts 2.3-60 amps 30-784 watts}	RACK MOUNTING  Single output
UNREGULATED, AC-DC  Shipped within 3 DAYS  \[ \begin{cases} 0 - 1000 volts \\ 0.02 - 23 amps \\ 0.8 - 560 watts \end{cases} \] \[ \begin{cases} 0 - 950 volts \\ 0.02 - 5 amps \\ 7 - 140 watts \end{cases} \end{cases} \]	Single output
NEMA 4X Enclosed we	e can mount many of our power supplies in NEMA enclosures
FIND POWER SUPPLY BY MODEL N	UMBER92
Circuit Enclosure Roxes You	ese modules can be used with <u>any</u> manufacturer's power supply to control an ternal horn or light, or to signal your PLC if the 'target' output voltage deviates90 u can now package your own circuits in the same rugged casework used Acopian power supplies
THIS SOUTH SURE	DER DIRECT FROM ACOPIAN Inside Back Cover

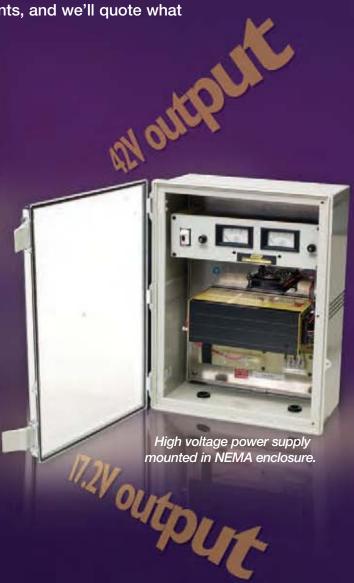


# Need a non-standard power supply?

# We'll customize a power supply to meet your requirements.

Acopian has been customizing power supplies to meet our customers' unique requirements for over 48 years. The cost is reasonable, even in small quantities. We ship them quickly – often within the same 3 working days as our standard models. And they carry the same five year warranty. Tell us your requirements, and we'll quote what we can do for you.





# Acopian can help you by making modifications such as these:

#### These Output modifications are easily done:

Non-standard output voltages/ranges

Capability to compensate large load line drops

Programmable with 0-5 or 0-10V control voltage

Programmable current control

Capability to provide a surge current at turn-on

Wide adjust zero-up outputs

Modified current limiting characteristics:

Adjustable current limiting

Latching current limiting

Constant current limiting

Pulsing limiting

Adjustable overvoltage protection

Redundancy: N+1 or diode OR-ing

Inhibit and enable control

Multiple sets of fused output terminals

Electrostatically shielded transformers

Low noise/low ripple outputs

Paralleling: passive or active

Switchable polarity outputs

Relay controlled outputs

#### These Input modifications are easily done:

Special input ranges

Selectable input voltage ranges

DC inputs to 350V

Logic-controlled on/off

400 Hz input

90-265 Vac input (Japan)

Inhibit/enable (TTL or other level)

AC inrush limiting

Soft start

Optically Isolated Control inputs

#### These Operating Features are easily done:

Alarm contacts

Monitor outputs (may be scaled)

Input switch

Output voltage selector switch

LED indicators

10-turn output controls

Test jacks (pin or banana)

Temperature protection (thermostat)

Analog or digital meters

Voltage and current monitors

Outputs on binding posts

Remote system AC control using SS relays

EMI and RFI filtering/shielding

Safety/interlock switches

#### These Mechanical modifications are easily done:

Input/output connector(s) instead of

screw terminals

Customer specified connectors

Flying lead connections

Output cables

Line cord (hard-wired or IEC with detachable cord)

Mounting flanges added

Clips for DIN rail mounting added

Changed case dimension

Special case to fit available space

Mounting in NEMA enclosure

Fan cooling

Handles/rubber feet added

Custom painted

Rack heights from 1¾" to 12¼"

Pluggable modules

Or we can build a Power System that will meet your requirements. See next page.

# Power Supply Systems

# Any way YOU want!



# The next 7 pages detail for you:

- The unlimited variety Acopian can make!
- How easy it is to order Power Systems Online!
- Acopian's 9 Day Shipping Promise for Systems!
- Why Acopian warranties its Systems for 5 years!

Since 1964, Acopian has been building Power Supply Systems for customers including Lockheed Martin, Raytheon, Northrop Grumman, BAE, Westinghouse, Walt Disney, U.S. Army, U.S. Navy, Emerson, Tyco, Siemens, Chevron, University of Chicago, MIT, Honeywell, Goodrich, Harris Corp, GM and GE. Shouldn't you be choosing Acopian too?



PHOTO COURTESY OF THE ICECUBE PROJECT

# "At Project IceCube, it's absolutely critical to have a good power supply.

The ice must be as pure and clear as possible. If the power to the ice top sensor system were to fail, we would risk the tank water freezing without being controlled, resulting in bubbles and impurities, and very much reducing the quality of ice and quality of information that we can see with our detectors. We chose Acopian power supplies to power our pumping and degassing systems because of their reputation for reliability. The people at Acopian met all of our highly demanding specifications and, despite very little time until our window to ship to the Pole, they met our schedule.

We were 100% satisfied."

#### Jim Baccus Cable System Manager Project IceCube

(the international high-energy neutrino observatory being built and installed in the ice below South Pole Station)

# The world's most demanding environments demand Acopian power systems.

Design your own Acopian power system online with the System Builder at www.acopian.com. Simply enter your requirements, and you'll receive a quotation for fully wired multiple-output power systems, without the need for you to prepare mechanical layouts or search through a power supply catalog.

Each system will be completely wired, tested and shipped within 9 days after receipt of the order. Choose Acopian – the power supplies of choice for the world's leading engineers.



ALL ACOPIAN POWER SUPPLIES MADE IN U.S.A.

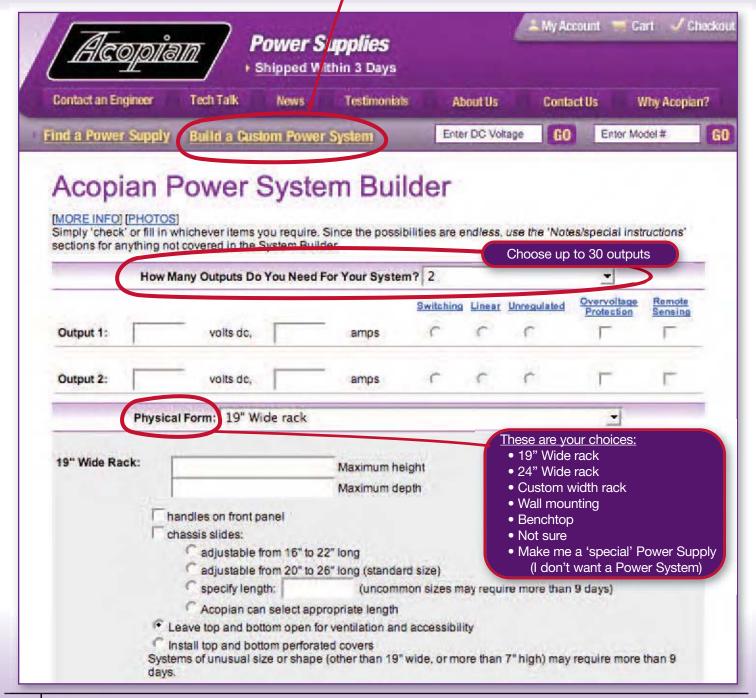


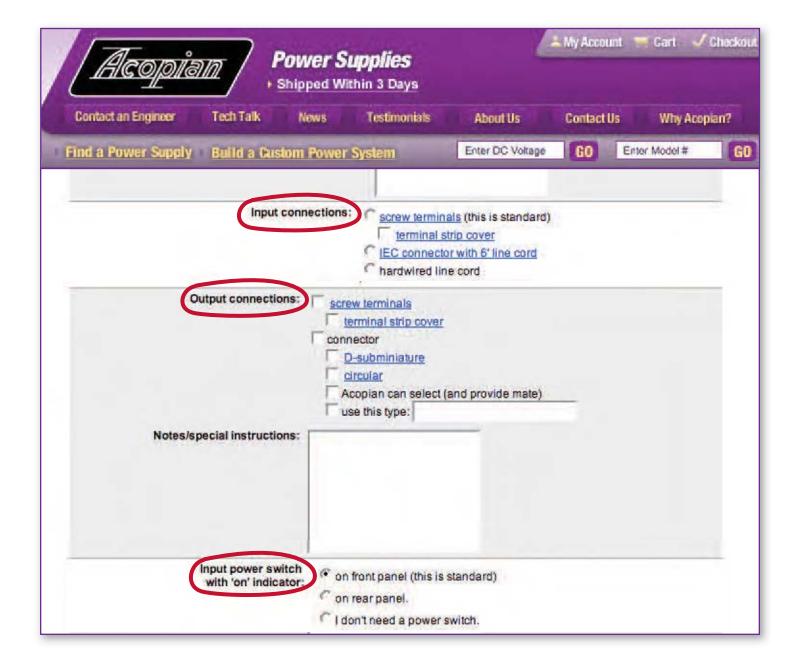
I-800-523-9478 • www.acopian.com

# Building your own Power Supply System is so simple anyone can do it ... with Acopian's Online System Builder!

www.acopian.com

Once Online, click here. Then...
Simply 'check' or fill in whichever items you require.



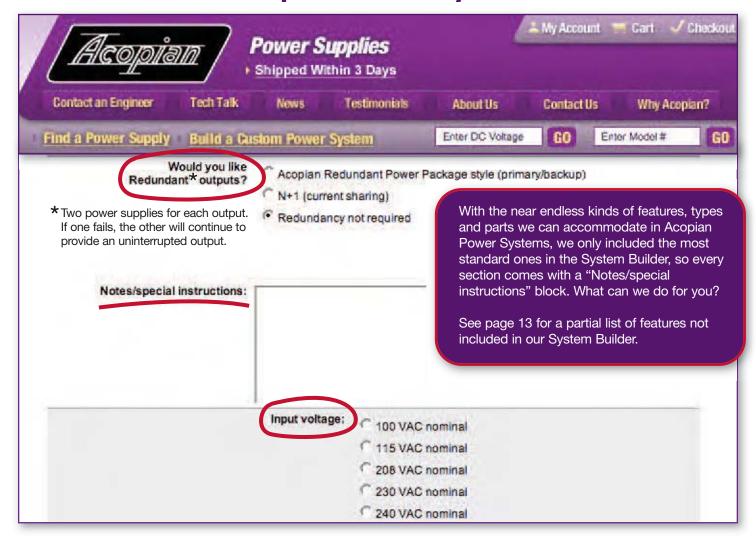




When Northrop Grumman engineers needed a system with output setting precision better than 1%, they turned to Acopian. A digital voltmeter and ammeter permit setting and monitoring the four outputs of this system to three digit accuracy. **Acopian shipped it within 9 Days of receiving the order.** And as is true of all Acopian systems, it shipped with a 5 year warranty.

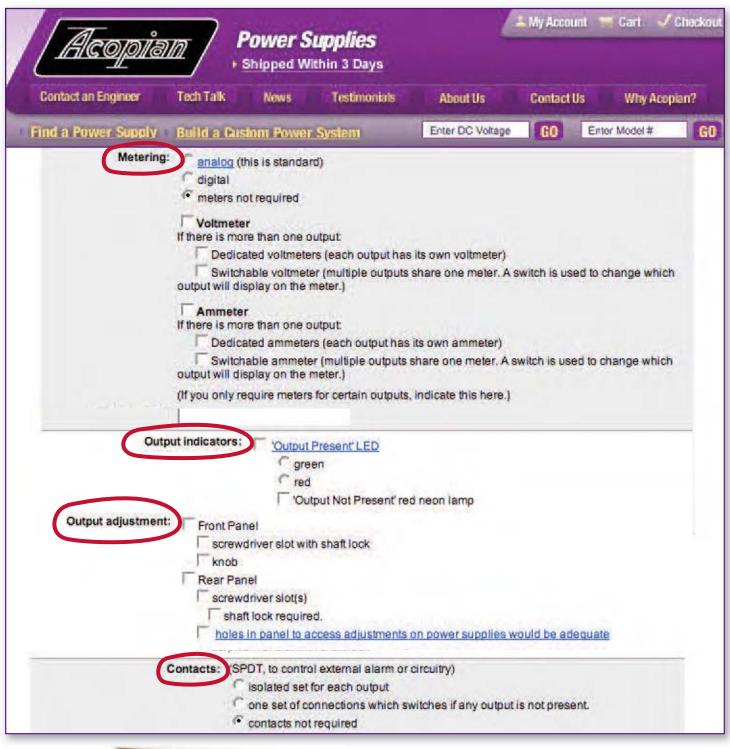
#### **Next!**

# Let us know if you want Redundancy in your Acopian Power System.



Two identical linearly regulated power supplies with their outputs connected in parallel provide a 48 Vdc 15A redundant output with line and load regulation better than  $\pm 0.05\%$ , and output ripple of less than 1 mV rms, 3 mV p-p. For AC redundancy, each supply can be fed from a different power source, and each has failure alarm contacts for remote monitoring of operating status. Because each supply is physically separate, one supply can be quickly and easily removed from the rack while the other continues to provide uninterrupted power to the load. This system was shipped within 9 days and carries Acopian's 5 year warranty.







Responding to a customer's critical need, Acopian was able to ship this system in less than the 9 days we had guaranteed to meet or beat. It has front panel voltage and current controls for each of its three outputs, and a voltmeter and ammeter that may be switched to check all output settings. It also has the unusual capability of being operable with either a 208 VAC 3-phase input or 230 VAC single phase, and came with Acopian's 5 year warranty.

## Lastly!

Indicate other special features or instructions you would like in your Acopian Multi-Output Power System.



Then... (Click Here to Submit Your 'System'

Your System Builder information is immediately transferred to Acopian via e-mail (you will receive a copy).

### Quote!

An engineer will review your information and assign a unique Acopian model number. A quote that includes price, lead-time and a full description of the proposed System will then be e-mailed to you.

# Acopian Power Systems can also include such features as:

#### **Output Features:**

Capability to compensate large load line drops
Programmable with 0-5 or 0-10V control voltage
Programmable current control

Capability to provide a surge current at turn-on Wide adjust zero-up outputs

Modified current limiting characteristics:

Adjustable current limiting Latching current limiting Constant current limiting

Pulsing limiting
Adjustable overvoltage protection
Inhibit and enable control
Multiple sets of fused output terminals
Electrostatically shielded transformers
Low noise/low ripple outputs
Paralleling: passive or active
Switchable polarity outputs
Relay controlled outputs

#### **Input Features:**

Selectable input voltage ranges
Logic-controlled turn-on
400 Hz input
90-265 Vac input (Japan)
Optically isolated control inputs
Two AC inputs (for redundancy)

#### **Operating Features:**

Monitor outputs (may be scaled)
10-turn output controls
Temperature protection (thermostat)
Voltage and current monitors
Outputs on binding posts
Remote system AC control using SS relays
EMI and RFI filtering/shielding
Safety/interlock switches

#### **Mechanical Features:**

Customer specified connectors
Flying lead connections
Output cables
Mounting flanges added
Special case to fit available space
Mounting in NEMA enclosure
Fan cooling
Custom painted
Pluggable modules

# **Power Systems by**



The possibilities are infinite!





Use the Online System Builder or Call Acopian at 1-800-523-9478 and discuss your requirements with an applications engineer. We'll do the rest.



# Need Ultra-Reliability?

Redundant Power Packages and Systems have two power supplies for each output.

If one fails, you're still operating.



Wall Mounting Redundant Power Package



Modular Redundant System (May be mounted on a DIN rail, wall, chassis or cabinet frame)



Redundant
Power Package









# **Use Redundant Power**

If none of our standard models meets your requirements, we'll build you one that does.

(See pages 6-14)

#### 284 standard models (see pages 16-27), each shipped within 9 Days

Our standard models have outputs from 5 to 125 volts, and up to 1200 watts. Each is fully wired, tested and shipped within 9 days after receiving your order. All that's left for you to do is to connect it to input power and your load.

#### We can customize Redundants for you

If no standard model meets your needs, we can customize a model for you, or design a 'special' for your unique requirements. We frequently design 'specials' with outputs as high as 3600 watts.

#### Various configurations to fit the available space

Acopian manufactures redundants in three form factors: rack mounting (some with power supplies that plug in from the front), wall mounting and modular. If you need something different, speak with one of our engineers. We can design a form that meets your requirements.

#### **Proven designs since 1973**

There are numerous considerations that go into the design of a good redundant system. (Can the power supplies compensate the voltage drops of the isolation diodes? Is the regulation maintained after the diodes? Is the output stable?) Acopian has been manufacturing a standard line of redundants since 1973. We have the expertise to build redundants that are extremely reliable, provide high performance and are easy to use.

#### **Five Year Warranty**

Obviously, the reliability of a redundant system is dependent upon the reliability of the power supplies it uses. We build our supplies so you can operate them reliably for many years, which is why all Acopian Redundants come with an unsurpassed, full 5 year warranty. Our customers have told us about Acopian supplies that have remained in use for 30 years and more.



#### **REDUNDANT POWER PACKAGES** and **MODULAR REDUNDANT SYSTEMS**

(Rack Mounting, Wall Mounting & Pluggable)

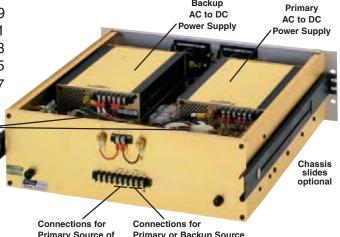
(Three separate modules)

Redundant Power Packages (LINEAR) . . . . . PAGES 18-19 Redundant Power Packages (SWITCHING)... PAGES 20-21 Pluggable Redundant Power Packages . . . . . PAGES 22-23 Modular Redundant Systems (LINEAR) . . . . . PAGES 24-25 Modular Redundant Systems (SWITCHING) . . PAGES 26-27

AC-DC single output

**Redundancy Isolation Diodes** & Output Monitor Circuits

- Shipped Within 9 Days
- U.L. Recognized (Power Packages on pages 18-21)
- Five Year Warranty



**Primary Source of AC Input Power** 

**Primary or Backup Source** of AC Input Power

Applications: Redundant Power should be considered for any equipment where the highest attainable reliability is essential, and an unexpected loss of power would be disastrous. Such applications include communications systems (both voice and data types), computer systems (volatile memory systems in particular), process controls, utility and municipal systems, and security/safety alarm systems.

Output Redundancy: Each Redundant Power Package or Modular Redundant System contains two identical power supplies with their outputs interconnected through a diode switching arrangement that will detect any fault condition, isolate it from the system output, and pass only the output of the other supply with no interruption of output power during the transition.

Input Redundancy: All Acopian Redundant Power Packages or Modular Redundant Systems may be operated with only one AC power source. However, two isolated sets of AC input connections are provided, so that two independent sources of AC input power may be used, to obtain the additional benefit of input power redundancy. By feeding one input through a battery-backup power source (UPS), DC output power will be maintained even if both AC power sources should fail.

Serviceability: A defective power supply can be rapidly and safely changed while the other supply continues to furnish uninterrupted power to the load. All input, output and alarm-contact connections are at the rear of the assembly for Rack Mounting models or on the front for Wall Mounting models or Modular Systems. For Rack Mounting models, the chassis slides and handles options are recommended for applications where it is desired to service the Redundant Power Package without removing it from the rack.

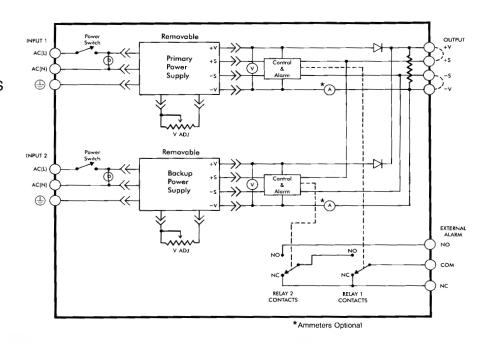
Operation: The output voltage of the primary supply is set approximately 0.2 volt higher than that of the backup supply. Under this condition, the backup supply's diode is not forward biased; only the primary supply delivers current to the load. If the output voltage of the primary supply decreases by more than 0.2 volt, the situation is reversed and only the backup supply delivers load current. There is no interruption of output power during the transition.

Monitoring Circuitry: Acopian Redundants contain two voltage monitoring circuits with relays, the contacts of which are available to control external failure alarms or other circuitry. The contact wiring of the two relays is connected in cascade, to simulate a single set of Form C contacts which switches if the output voltage of either power supply decreases by more than 2.0 volts from the nominal rating (3.0 volts for Linear models with outputs over 49 volts; 4.0 volts for Switching models with outputs over 49 volts).

Overvoltage Protection: Automatic recovery. Each power supply contains an overvoltage protection circuit, to assure that neither power supply output will significantly exceed the nominal output voltage rating under any condition, including incorrect application and misadjustment.

#### Simplified Diagram for Redundant Power Packages

(see page 23 for Simplified Diagram of the Pluggable Redundant Power Packages or page 25 for Simplified Diagram of the Modular Redundant Systems)



SPECIFICATIONS (for all Redundant Power Packages & Modular Redundant Systems)

**Input Voltage:** (A separate set of AC input terminals is provided for each power supply, so that if two sources of AC input power are available, one may be used for each supply and so reduce the possibility of output dropout due to loss of input power.)

Linear (all models): 105-125 VAC, 50-400 Hz, single phase.

Switching (Redundant Power Packages): 90-132 VAC, 49-61 Hz, single phase.

For models R24W7, RWL24W7, R28W7, RWL28W7, R48W7 and RWL48W7, the use of 30A lines is recommended.

When operating on 50 Hz input, derate output by 5%.

Switching (Pluggable Redundant Power Packages): 90-265 VAC, 49-420 Hz, single phase.

Switching (Modular Redundant Systems): 90-265 VAC, 49-420 Hz, single phase.

**Remote Voltage Sensing:** Provision for sensing the output voltage across the load, so that drops in the load lines are compensated, is a standard feature.

#### **Output Voltage:**

Normal mode: Nominal voltage shown in tables.

Backup mode: 0.2 volt less than nominal voltage shown in tables.

#### **Output Regulation:**

Line: ±0.05%

Load: ±0.05% (Dynamic regulation - does not include 0.2 volt shift which occurs during switchover to lower-set backup supply.)

Load Protection: Overvoltage protection.

**Overload/Short Circuit Protection:** Foldback current limiting with automatic recovery (Switching Modular Redundant Systems and Pluggable Redundant Power Packages have current limiting with automatic recovery).

**Polarity:** Output is floating; either positive or negative output terminal may be grounded or floated up to 300 volts above ground.

**Output Monitoring:** 

Redundant Power Packages: A separate voltmeter for each output (standard). Ammeters available; see Options.

Modular Redundant Systems: 'Output Present' LED for each power supply is located on the Integration Module.

('Output Present' green LEDs are also located on each power supply (DC on) on the Switching Regulated Modular Redundant Systems.)

Alarm Relay Contact Ratings: 120 VAC, 8A / 60 Vdc, 1A. (To comply with SELV requirements, limit switched voltage to 60 Vdc/42 VAC.)

Temperature Coefficient: 0.02%/°C (Typical).

#### **Ambient Operating Temperature:**

**Linear:** -20 to +71°C. **Switching:** 0 to +71°C.

#### **Storage Temperature:**

Linear: -55 to +85°C. Switching: -40 to +85°C. Terminal Strip Cover: Clips on.





#### LINEAR REGULATED

#### **REDUNDANT POWER PACKAGES**

Rack Mounting & Wall Mounting

AC-DC single output

- Shipped Within 9 Days
- All Models U.L. Recognized
- Five Year Warranty

An Acopian Redundant Power Package is installed by simply connecting the AC input and DC output terminals. All wiring (including isolation diodes, output monitor circuits, switches, meters, adjustments and connectors) has been done for you.



For Specifications and other information, see pages 16 & 17.

#### **OPTIONS**

Add option suffixes in alphabetical order. Example: R5H16AH-230.

Ammeters: One for each output. For models in case sizes 3R14 and 317R18 two volt/ammeters, each with switch, are substituted for the standard voltmeters. Add suffix "A" to model number and \$120.00 to price.

**Audible Alarms:** Piercing whistle alerts personnel to a voltage lower than normal. Front panel mounted, one for each power supply. When this option is included and the alarm contacts are also used, meeting SELV levels requires that the input voltages be no greater than 125 VAC. To order, add suffix "K" to model number and \$90.00 to price.

Separate Alarm Contacts for each Power Supply: If a power supply's output is incorrect, using two alarms permits remotely identifying that power supply. Each contact set is Form C (SPDT). To order, add suffix "R" to model number and \$35.00 to price.(Cannot combine "K" and "R" options on Wall Mounting units.)

**Handles** (for Rack Mounting models): Add suffix "H" to model number and \$30.00 to price.

Chassis Slides (for Rack Mounting models): For racks having rear mounting rails spaced 20" to 26" behind the front panel. To order, add suffix "S" to model number and \$90.00 to price.

**230 Volt Input:** For operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$75.00 to price. Requires two additional days.

#### **Linear Regulated REDUNDANT POWER PACKAGES**

Discutal Deal Massation Madala II

Nominal			ut Curi	ent	Ripple				<del></del>		
Output Voltage	Range ±V	40°C	nps. at	71°C	mV RMS	(\$) Price	Model	Case Size	(\$) Price	Model	Case Size
					_			3R14	1395		
5 5	.5 .5	2.6 5.3	2.5 4.4	2.4 3.5	1 1	1095 1195	R5N8X R5M6	5R14	1495	RWL5N8X RWL5M6	317R18 517R18
5	.5	11	9.3	7.5	ΙiΙ	1295	R5M13	5R18	1595	RWL5M13X	517R20
5	.5	21	17	14	1	1495	R5H11	7R18	1795	RWL5H11	719R20
5	.5	28	23	19	1	1695	R5H16	7R20	1995	RWL5H16	719R25
12	.5	1.5			1	1095	R12N8X	3R14	1395	RWL12N8X	317R18
12	.5	3.5	3	2.5	1	1195	R12M6	5R14	1495	RWL12M6	517R18
12 12	.5 .5	8 16	7.5 13.8	7 11.2	1 1	1295 1495	R12M13 R12H11	5R18 7R18	1595 1795	RWL12M13X RWL12H11	517R20 719R20
12	.5	20	17	14.2		1695	R12H16	7R20	1995	RWL12H11	719R25
15	.5	1.5	1.5	1.5	1	1095	R15N8X	3R14	1395	RWL15N8X	317R18
15	.5	4	3.8	3.6	l i l	1195	R15M9	5R14	1495	RWL15M9	517R18
15	.5	6.5	6	5.5	1	1295	R15M13	5R18	1595	RWL15M13X	517R20
15	.5	14.7	12.5	10.3	1	1495	R15H11	7R18	1795	RWL15H11	719R20
15	.5	18.7	16	13.3	1	1695	R15H16	7R20	1995	RWL15H16	719R25
24	.5	.9	.9	.9	1	1095	R24N8X	3R14	1395	RWL24N8X	317R18
24 24	.5 .5	3 5	2.7 5	2.4 5	1 1	1195 1295	R24M9 R24M13	5R14 5R18	1495 1595	RWL24M9 RWL24M13X	517R18 517R20
24	.5 .5	11.7	10.2	8.7		1495	R24H11	7R18	1795	RWL24W13A	719R20
24	.5	14.7	12.7	10.7	il	1695	R24H16	7R20	1995	RWL24H16	719R25
28	.5	1	1	1	1	1095	R28N8X	3R14	1395	RWL28N8X	317R18
28	.5	2.7	2.6	2.5	1	1195	R28M9	5R14	1495	RWL28M9	517R18
28	.5	5	5	5	1	1295	R28M13	5R18	1595	RWL28M13X	517R20
28	.5	10.5	9.2	8	1 1	1495	R28H11	7R18	1795	RWL28H11	719R20
28	.5	14	12	10		1695	R28H16	7R20	1995	RWL28H16	719R25
48 48	.5 .5	.4 1.6	.4 1.4	.4 1.2	1 1	1130 1240	R48N8T R48M9	3R14 5R14	1430 1540	RWL48N8T RWL48M9	317R18   517R18
48	.5 .5	3	3	3		1340	R48M13	5R18	1640	RWL48M13X	517R10 517R20
48	.5	6	5	4	i	1545	R48H11	7R18	1845	RWL48H11	719R20
48	.5	8.5	7.2	5.5	1	1835	R48H16	7R20	2135	RWL48H16	719R25
60	1	.25	.25	.25	1	1160	R60N8T	3R14	1460	RWL60N8T	317R18
60	1	1	.9	.8	1	1270	R60M9	5R14	1570	RWL60M9	517R18
60	1	2.5	2.1	1.7	1	1370	R60M13	5R18	1670	RWL60M13X	517R20
60 60	1	5 7	4.1 5.8	3.3 4.6	1 1	1575 1845	R60H11 R60H16	7R18 7R20	1875 2145	RWL60H11 RWL60H16	719R20 719R25
120	1	.12	.12	.12	1	1180	R120N8T	3R14	1480	RWL120N8T	317R18
120	1	.12	.12	.12		1295	R120M6	5R14	1595	RWL120N61	517R18
120	1	1.2	1.1	1	1 1	1400	R120M13	5R18	1700	RWL120M13X	517R20
120	1	2.5	2	1.6	1	1615	R120H11	7R18	1915	RWL120H11	719R20
120	1	3.5	2.9	2.3	1	1890	R120H16	7R20	2190	RWL120H16	719R25
125	1	.12	.12	.12	1	1200	R125N8T	3R14	1500	RWL125N8T	317R18
125	1	.4	.4	.4	1	1315	R125M6	5R14	1615	RWL125M6	517R18
125 125	1	1.2 2.4	1.1 1.9	1 1.5	1 1	1420 1635	R125M13 R125H11	5R18 7R18	1720 1935	RWL125M13X RWL125H11	517R20 719R20
125	1	3.4	2.8	2.3		1910	R125H16	7R20	2210	RWL125H16	719R20 719R25
		- C- (C- (C- (C- (C- (C- (C- (C- (C- (C-	-								

#### Wall Mounting



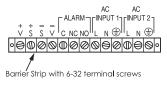
#### CASE SIZES:

#### **Rack Mounting:**

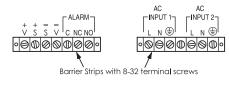
3R14 3½" x 19" panel, 141%6" deep. (15 lb.) 5R14 5¼" x 19" panel, 14½6" deep. (23 lb.) 5R18 5½" x 19" panel, 17½" deep. (29 lb.) 7R18 7" x 19" panel, 18½" deep. (50 lb.) 7R20 7" x 19" panel, 20½" deep. (64 lb.)

Wall Mounting: See page 21.

### CONNECTIONS FOR CASE SIZES 3R14, 317R18, 5R14, 5R18, 517R18 and 517R20:



### CONNECTIONS FOR CASE SIZES 7R18, 7R20, 719R20, and 719R25:



Additional CONNECTIONS for "R" Option: Separate Alarm Contacts for each Power Supply

(Note: Connections for 'ALARM' in above drawings become connections for 'PS2 ALARM')





# PARALLELABLE "SEMISYSTEM" POWER SUPPLIES

LINEAR REGULATED

Two units connected in parallel function the same as a Redundant Power Package.



(Handles optional)

SHIPPED WITHIN 9 DAYS FIVE YEAR WARRANTY ALL MODELS U.L. RECOGNIZED

Each supply contains a voltmeter, isolation diodes, a voltage monitor circuit providing contacts for control of an external alarm (or built-in audible alarm) and overvoltage protection circuit, so that two paralleled units are functionally equivalent to a Redundant Power Package. All connections are by means of a Jones connector (mate provided), so that one supply may be quickly, easily and safely installed in or removed from the rack while another provides uninterrupted power to the load. For a redundant system, order two units.

**Specifications:** Same as shown under SPECIFICATIONS on page 17 for Linear Redundant Power Packages.

Case Size: 51/4" x 19" panel, 1611/16" deep. (53 lbs.)

To allow for mating connector and radius of wiring, mounting space should be at least 20" deep.

### PARALLELABLE "SEMISYSTEM" POWER SUPPLIES Linear Regulated

For a redundant system, order two units.

	Nominal Output	Adjust Range	Output ( Amp	Current s. at	Ripple mV	(\$)		Case
ı	Voltage	±۷	40°C	55°C	RMS	Price	Model	Size
ı	5	.5	55	43	1	1095	R5PH17	5R17
ı	12	.5	41	32	1	1095	R12PH17	5R17
ı	15	.5	37	29	1	1095	R15PH17	5R17
ı	24	.5	28	22	1	1095	R24PH17	5R17
ı	28	.5	27	21	1	1095	R28PH17	5R17
ı	48	.5	15	12	1	1095	R48P17	5R17

#### **OPTIONS**

Add option suffixes in alphabetical order.

**Ammeter:** Add suffix letter "A" to model number and \$60.00 to unit price.

**Handles:** Add suffix "H" to model number and \$30.00 to unit price.

**Audible Alarm:** Whistle alerts personnel to voltage lower than normal. Front panel mounted. Units with this option do not have provision for control of an external alarm. Add suffix "K" to model number and \$45.00 to unit price.

**230 Volt Input:** For operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "–230" to model number and \$40.00 to unit price. Requires two additional days.





#### SWITCHING REGULATED

#### REDUNDANT POWER PACKAGES

**Rack Mounting & Wall Mounting** 

AC-DC single output

- Shipped Within 9 Days
- All Models U.L. Recognized
- Five Year Warranty

An Acopian Redundant Power Package is installed by simply connecting the AC input and DC output terminals. All wiring (including isolation diodes, output monitor circuits, switches, meters, adjustments and connectors) has been done for you.



Rack Mounting

For Specifications and other information, see pages 16 & 17.

#### **OPTIONS**

Add option suffixes in alphabetical order. Example: R12W6AH-230.

Ammeters: One for each output. Add suffix letter "A" to model number and \$120 to price.

**Audible Alarms:** Piercing whistle alerts personnel if the power supply's output deviates by more than 2 volts from the nominal rating. Front panel mounted, one for each power supply. When this option is included and the alarm contacts are also used, meeting SELV levels requires that the input voltages be no greater than 125 VAC. To order, add suffix "K" to model number and \$90.00 to price.

Separate Alarm Contacts for each Power Supply: If a power supply's output is incorrect, using two alarms permits remotely identifying that power supply. Each contact set is Form C (SPDT). To order, add suffix "R" to model number and \$35.00 to price. (Cannot combine "K" and "R" options on Wall Mounting units.)

**Handles** (for Rack Mounting models): Add suffix "H" to model number and \$30.00 to price.

Chassis Slides (for Rack Mounting models): For racks having rear mounting rails spaced 20" to 26" behind the front panel. To order, add suffix "S" to model number and \$90.00 to price.

**230 Volt Input:** For operation on inputs of 180-264 VAC, 49-61 Hz. To order, add suffix "–230" to model number and \$100.00 to price. Requires two additional days.

#### **Rack Mounting Case Sizes:**

5RW16 5¼" x 19" panel, 16<sup>13</sup>/16" deep. (21 lb.) 5RW18 5¼" x 19" panel, 18<sup>13</sup>/16" deep. (27 lb.) 5RW22 5¼" x 19" panel, 22<sup>13</sup>/16" deep. (32 lb.)

Wall Mounting Case Sizes: See page 21.

#### **Switching Regulated REDUNDANT POWER PACKAGES**

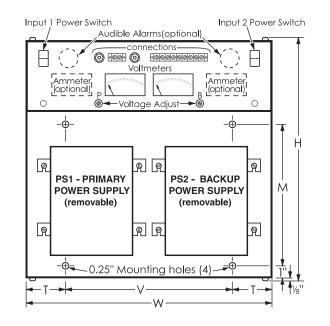
Nominal			ut Cur		Rippl	e mV	Rack	Mounting	Models	Wal	Mounting M	odels
Output Voltage	Range ±V	Ar 40°C	nps. at		(@ 25 M	Hz BW)	(\$) Price	Model	Case Size	(\$) Price	Model	Case Size
12 12 12	.5 .5 .5	26 41 61	22 35 52	18 28 42	15 15 15	100 100 100	1995 2395 2795	R12W6 R12W9 R12G7	5RW16 5RW18 5RW22	2295	RWL12W6 RWL12W9 RWL12G7	519RW15 519RW18 522RW17
15 15 15	.5 .5 .5	21 33 49	18 28 42	15 23 34	15 15 15	100 100 100	1995 2395 2795	R15W6 R15W9 R15G7	5RW16 5RW18 5RW22	2695	RWL15W6 RWL15W9 RWL15G7	519RW15 519RW18 522RW17
24 24 24 24	.5 .5 .5	15 24 36 50	13 21 31 42	11 17 25 35	15 15 15 15	100 100 100 100	1995 2395 2795 2995	R24W6 R24W9 R24G7 R24W7	5RW16 5RW18 5RW22 5RW22	2695	RWL24W6 RWL24W9 RWL24G7 RWL24W7	519RW15 519RW18 522RW17 522RW17
28 28 28 28	.5 .5 .5	13 20 30 42	11 17 26 35	9 14 21 29	15 15 15 15	100 100 100 100	1995 2395 2795 2995	R28W6 R28W9 R28G7 R28W7	5RW16 5RW18 5RW22 5RW22	2695	RWL28W6 RWL28W9 RWL28G7 RWL28W7	519RW15 519RW18 522RW17 522RW17
48 48 48 48	.5 .5 .5	8 12 19 25	7 10 16 21	5 8 13 17	25 25 25 25 25	150 150 150 150	1995 2395 2795 2995	R48W6 R48W9 R48G7 R48W7	5RW16 5RW18 5RW22 5RW22	2695 3095	RWL48W6 RWL48W9 RWL48G7 RWL48W7	519RW15 519RW18 522RW17 522RW17



#### Wall Mounting



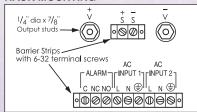
#### **Wall Mounting Case Sizes:**



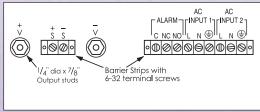
Case Size	н	W	М	V	Т	Depth	Approx. Weight
317R18	18½″	17	11	14	<b>1</b> ½	41/4	18 lb.
517R18	18½″	17	11	14	<b>1</b> ½	6	22-26 lb.
517R20	201/2"	17	13	13	2	6	34 lb.
519RW15	15½″	19	8	13	3	<b>6</b> ½ <sub>16</sub>	24 lb.
519RW18	18½″	19	11	13	3	<b>6</b> ½16	27 lb.
522RW17	171/4"	<b>22</b> ½	10	16½	3	<b>6</b> ½ <sub>16</sub>	33 lb.
719R20	201/2"	19	13	13	3	<b>7</b> <sup>3</sup> / <sub>4</sub>	58 lb.
719R25	25½″	19	18	13	3	<b>7</b> <sup>3</sup> / <sub>4</sub>	70 lb.

#### **CONNECTIONS:**

#### RACK MOUNTING



#### WALL MOUNTING



Additional CONNECTIONS for "R" Option: Separate Alarm Contacts for each Power Supply

(Note: Connections for 'ALARM' in above drawings become connections for 'PS2 ALARM')





#### SWITCHING REGULATED

# PLUGGABLE REDUNDANT POWER PACKAGES (Power Factor Correction and Universal Input)

AC-DC single output

- Shipped Within 9 Days
- Five Year Warranty

**Extremely high overall reliability** results from connecting two power sources so that one will continue to provide power to their load even if the other becomes inoperative. Acopian Redundant Power Packages have all the wiring done for you - not only isolation diodes, but also switches, meters, adjustments and output monitor circuits. All you need to do is connect the input and output terminals.

**System Description:** These models are functionally identical to the other Redundant Power Packages, but have the added advantage that a power supply can literally be changed in seconds.

#### **OPTIONS**

Add option suffixes in alphabetical order. Example: R24WP8XAHKS.

Ammeters: One for each output. Add suffix letter "A" to model number and \$120.00 to price.

**Audible Alarms:** Front panel mounted, one for each power supply. Piercing whistle alerts personnel if the power supply's output deviates by more than 2 volts from the nominal rating (4 volts for 50 to 125 volt models). When this option is included and the alarm contacts are also used, meeting SELV levels requires that the input voltages be no greater than 125 VAC. To order, add suffix "K" to model number and \$90.00 to price.

Separate Alarm Contacts for each Power Supply: If a power supply's output is incorrect, using two alarms permits remotely identifying that power supply. Each contact set is Form C (SPDT). To order, add suffix "R" to model number and \$35.00 to price.

**Handles:** Add suffix "H" to model number and \$30.00 to price.

**Chassis Slides:** For racks having rear mounting rails spaced 20" to 26" behind the front panel. To order, add suffix "S" to model number and \$90.00 to price.



For more Specifications and information, see pages 16 & 17.

#### **SPECIFICATIONS**

Input Voltage: 90-265 VAC, 49-420 Hz, single phase. (A separate set of AC input terminals is provided for each power supply, so that if two sources of AC input power are available, one may be used for each supply and so reduce the possibility of output dropout due to loss of input power.)

**Power Factor:** 0.99 typical at 115 VAC, 60Hz and full load. Complies with EN61000-3-2.

Drift: ±0.1% typical over 8 hours, after 30 minute warmup.

Inrush Current: Cold start, (thermistor limiter) 20A peak @ 115 VAC; 40A peak @ 230 VAC.

Startup Time: 800 mS typical.

**Remote Sensing:** Compensates up to 0.5 volt drop per output line (1 volt for 50 to 125 volt models), within the limits of the output voltage adjustment range.

Holdup Time: 16 mS minimum.

**Transient Response:** 300  $\mu$ S to return to  $\pm 1\%$  of output setting. Maximum of  $\pm 3\%$  output excursion following a load step change from 50% to 100%.

Switching Frequency: 100 kHz (Typical).

Isolation: Input to output, input to case; 500 VAC.

Output to case; 300 VAC

Thermal Protection: Thermostat, self-resetting.

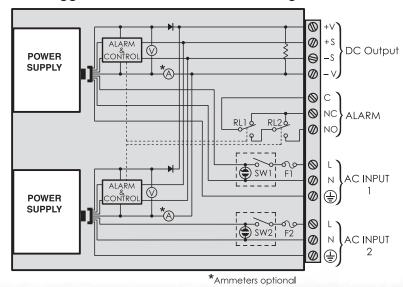
Cooling: Forced-air cooled; air enters front of system and

exits from top.

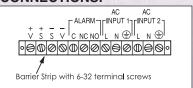
CASE SIZE: 5RP13 5 1/2 x 19" panel, 12 1/2 deep. (14 lb. 4 oz.)

Nominal Output	Range		ut Curi nps. at	ent	Ripple (@ 25 N	e mV IHz BW)	(\$)		Case
Voltage	±٧	40°C	55°C	71°C	RMS	P-P	Price	Model	Size
3.3	.5	15.4	13	10.7	10	50	1390	R3.3WP8X	5RP13
3.3	.5	24	20.5	16.8	10	50	1550	R3.3WP8	5RP13
5	.5	15.4	13	10.7	10	50	1390	R5WP8X	5RP13
5	.5	24	20.5	16.8	10	50	1550	R5WP8	5RP13
6	.5	15	12.6	10.5	10	50	1390	R6WP8X	5RP13
6	.5	23	19.5	16.8	10	50	1550	R6WP8	5RP13
7	.5	14.7	12.4	10.3	10	50	1390	R7WP8X	5RP13
7	.5	23	19.5	16.1	10	50	1550	R7WP8	5RP13
8	.5	14.4	12	10	15	100	1390	R8WP8X	5RP13
8	.5	23	19.5	16.1	15	100	1550	R8WP8	5RP13
9	.5	14.1	12	9.8	15	100	1390	R9WP8X	5RP13
9	.5	22	18.7	15.4	15	100	1550	R9WP8	5RP13
10	.5	13.5	11.5	9.5	15	100	1390	R10WP8X	5RP13
10	.5	21	18.5	15	15	100	1550	R10WP8	5RP13
12	.5	12.3	10.5	8.6	15	100	1390	R12WP8X	5RP13
12	.5	20	17	14	15	100	1550	R12WP8	5RP13
13	.5	11.3	9.7	7.9	15	100	1390	R13WP8X	5RP13
13	.5	18.4	15.7	12.9	15	100	1550	R13WP8	5RP13
14	.5	10.9	9.3	7.6	15	100	1390	R14WP8X	5RP13
14	.5	17.6	15	12.3	15	100	1550	R14WP8	5RP13
15	.5	10.2	8.7	7.1	15	100	1390	R15WP8X	5RP13
15	.5	16.5	14	11.5	15	100	1550	R15WP8	5RP13
18	.5	8.5	7.2	5.9	15	100	1390	R18WP8X	5RP13
18	.5	13.7	11.6	9.5	15	100	1550	R18WP8	5RP13
20	.5	7.6	6.5	5.3	15	100	1390	R20WP8X	5RP13
20	.5	12.7	10.7	8.8	15	100	1550	R20WP8	5RP13
24	.5	7.2	6.1	5	15	100	1390	R24WP8X	5RP13
24	.5	11.5	9.8	8	15	100	1550	R24WP8	5RP13
25	.5	6.6	5.6	4.6	15	100	1390	R25WP8X	5RP13
25	.5	10.6	9	7.4	15	100	1550	R25WP8	5RP13
28	.5	5.9	5	4.1	15	100	1390	R28WP8X	5RP13
28	.5	9.5	8.1	6.7	15	100	1550	R28WP8	5RP13
30	.5	5.6	4.8	4	25	150	1390	R30WP8X	5RP13
30	.5	8.7	7.4	6.1	25	150	1550	R30WP8	5RP13
32	.5	5.2	4.5	3.7	25	150	1390	R32WP8X	5RP13
32	.5	8.3	7	5.8	25	150	1550	R32WP8	5RP13
36	.5	4.7	4	3.3	25	150	1390	R36WP8X	5RP13
36	.5	7.7	6.5	5.4	25	150	1550	R36WP8	5RP13
40	.5	4.2	3.6	3	25	150	1390	R40WP8X	5RP13
40	.5	6.8	5.8	4.8	25	150	1550	R40WP8	5RP13
48	.5	3.5	3	2.5	25	150	1390	R48WP8X	5RP13
48	.5	5.7	4.9	4	25	150	1550	R48WP8	5RP13
50	1	3.3	2.8	2.3	50	150	1390	R50WP8X	5RP13
50		5	4.3	3.5	50	150	1550	R50WP8	5RP13
55	1	3	2.5	2.1	50	150	1390	R55WP8X	5RP13
55		4.5	3.8	3.1	50	150	1550	R55WP8	5RP13
60	1	2.8	2.3	1.9	50	150	1390	R60WP8X	5RP13
60		4.2	3.5	2.9	50	150	1550	R60WP8	5RP13
70	1	2.4	2	1.7	67	200	1390	R70WP8X	5RP13
70		3.6	3.1	2.5	67	200	1550	R70WP8	5RP13
75	1	2.2	1.8	1.5	67	200	1390	R75WP8X	5RP13
75		3.3	2.8	2.3	67	200	1550	R75WP8	5RP13
80	1	2.1	1.7	1.4	67	200	1390	R80WP8X	5RP13
80		3.1	2.6	2.2	67	200	1550	R80WP8	5RP13
90	1	1.8	1.5	1.3	100	300	1390	R90WP8X	5RP13
90		2.8	2.4	2	100	300	1550	R90WP8	5RP13
100	1	1.7	1.4	1.2	150	450	1390	R100WP8X	5RP13
100		2.5	2.1	1.8	150	450	1550	R100WP8	5RP13
110	1	1.5	1.3	1.1	150	450	1390	R110WP8X	5RP13
110		2.3	1.9	1.6	150	450	1550	R110WP8	5RP13
120	1	1.4	1.2	1	150	450	1390	R120WP8X	5RP13
120		2.1	1.8	1.5	150	450	1550	R120WP8	5RP13
125	1	1.3	1.1	0.9	150	450	1390	R125WP8X	5RP13
125		2	1.7	1.4	150	450	1550	R125WP8	5RP13

# Simplified Diagram for Pluggable Redundant Power Packages



#### **CONNECTIONS:**



Additional CONNECTIONS for "R" Option:
Separate Alarm Contacts for each Power Supply

(Note: Connections for 'ALARM' in the above drawing become connections for 'PS2 ALARM')





#### LINEAR REGULATED

#### **MODULAR REDUNDANT SYSTEMS**

AC-DC single output

- Shipped Within 9 Days
- Five Year Warranty

These systems have the versatility to be mounted in a wide variety of ways - within a system cabinet, on a DIN rail or to a wall. Another benefit is that the three modules need not be mounted together, so that if a control panel is crowded, just the Integration Module may be mounted there and the power supplies mounted elsewhere.

System Description: Each Modular Redundant DC Power System consists of three units: two identical power supplies connected to an Integration Module by 24" long cables. The Integration Module includes the diodes for isolating the power supply outputs, AC input switches, input fuses, LED 'output present' indicators, failure alarm circuits, and the umbilical cables which plug into the power supplies. Connections for the AC inputs, redundant DC output and failure alarm relays are on a screw terminal strip.

**Mounting:** Each module has threaded mounting holes which permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, use an Accessory Mounting Kit (see page 25).

**Interconnection:** The Integration Module has two 24 inch long cables.

#### **OPTIONS**

**Cable lengths:** Although 24" is standard, any other length from 12" to 60" may be ordered as an option. To order, add suffix "C??" to model number and \$60.00 to price. Replace the "??" with the cable length desired. For example, if you are ordering Model RM24M9 with 4 foot (48") cables, the model number would be RM24M9C48, and the price would be \$995.00+\$60.00=\$1055.00.

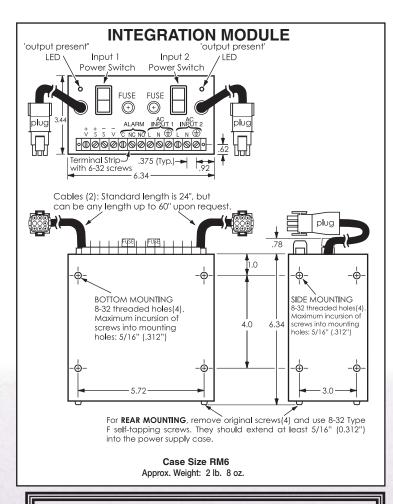
**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "–230" to model number and \$80.00 to price. The "–230" option requires two additional days.



For Specifications and other information, see pages 16 & 17.

#### **Linear Regulated MODULAR REDUNDANT SYSTEMS**

	Nominal				Ripple			Case	sizes	
	Output					mV RMS	_(\$)	l	Integration	Power
1	Voltage	±۷	40°C	55°C	71°C		Price	Model	Module	Supplies (2)
	5	.5	2.6	2.5	2.4	1	895	RM5N8X	RM6	CN8H
	5 5	.5 .5	5.3 11	4.4 9.3	3.5 7.5	1	995 1095	RM5M6 RM5M13	RM6 RM6	CM6 CM13
1	5 5	.5 .5	21	9.3	7.5 14		1295	RM5H11	RM6	CH11
	12	.5	1.5	1.5	1.5	1	895	RM12N8X	RM6	CN8H
	12	.5	3.5	3	2.5		995	RM12M6	RM6	CM6
	12	.5	8	7.5	7	1	1095	RM12M13	RM6	CM13
	12	.5	16	13.8	11.2	1	1295	RM12H11	RM6	CH11
	12	.5	20	17	14.2	1	1495	RM12H16	RM6	CH16
	15	.5	1.5	1.5	1.5	1	895	RM15N8X	RM6	CN8H
	15	.5	4	3.8	3.6	1	995	RM15M9	RM6	CM9
	15 15	.5 .5	6.5 14.7	6 12.5	5.5 10.3	1	1095 1295	RM15M13 RM15H11	RM6 RM6	CM13 CH11
	15	.5 .5	18.7	16	13.3	1	1495	RM15H16	RM6	CH16
	24	.5	.9	.9	.9	1	895	RM24N8X	RM6	CN8H
	24	.5	3	2.7	2.4	i	995	RM24M9	RM6	CM9
	24	.5	5	5	5	1	1095	RM24M13	RM6	CM13
	24	.5	11.7	10.2	8.7	1	1295	RM24H11	RM6	CH11
ı	24	.5	14.7	12.7	10.7	1	1495	RM24H16	RM6	CH16
	28	.5	1	1	1	1	895	RM28N8X	RM6	CN8H
۱	28	.5	2.7	2.6	2.5	1	995	RM28M9	RM6	CM9
	28 28	.5 .5	5 10.5	5 9.2	5 8	1	1095 1295	RM28M13 RM28H11	RM6 RM6	CM13 CH11
ı	28	.5 .5	14	12	10	1	1495	RM28H16	RM6	CH16
	48	.5	.4	.4	.4	1	930	RM48N8T	RM6	CN8T
ı	48	.5	1.6	1.4	1.2	1	1040	RM48M9	RM6	CM9
ı	48	.5	3	3	3	1	1140	RM48M13	RM6	CM13
ı	48	.5	6	5	4	1	1345	RM48H11	RM6	CH11
ı	48	.5	8.5	7.2	5.5	1	1635	RM48H16	RM6	CH16
	60	1	.25	.25	.25	1	960	RM60N8T	RM6	CN8T
	60	1	1 2.5	.9 2.1	.8 1.7	1	1070 1170	RM60M9	RM6 RM6	CM9 CM13
ı	60 60	1	2.5 5	4.1	3.3	1	1375	RM60M13 RM60H11	RM6	CH11
ı	60	i	7	5.8	4.6		1645	RM60H16	RM6	CH16
	120	1	.12	.12	.12	1	980	RM120N8T	RM6	CN8T
	120	i	.5	.5	.4	i	1095	RM120M6	RM6	CM6
	120	1	1.2	1.1	1	1	1200	RM120M13	RM6	CM13
	120	1	2.5	2	1.6	1	1415	RM120H11	RM6	CH11
	120	1	3.5	2.9	2.3	1	1690	RM120H16	RM6	CH16
	125	1	.12	.12	.12	1	1000	RM125N8T	RM6	CN8T
	125 125	1	.4 1.2	.4 1.1	.4 1	1	1115 1220	RM125M6 RM125M13	RM6 RM6	CM6 CM13
	125	1	2.4	1.1	1.5	1	1435	RM125H11	RM6	CH11
	125	i	3.4	2.8	2.3	i	1710	RM125H16	RM6	CH16
ľ		_				-				



#### **ACCESSORY MOUNTING KITS**

- FOR WALL MOUNTING (See page 91 for illustration.)

These kits provide a way of mounting power supplies on a wall or panel when the other side of the mounting surface is inaccessible. Each kit consists of four aluminum brackets and four machine screws for fastening them to the power supply, effectively adding mounting flanges to the power supply.

For case sizes RM6, CM6, CM9, CM13, CH11, CH16

GB8 Mounting Kit (#8-32 mounting holes) . . . . \$8 For case size CN8T

NP6 Mounting Kit (#6-32 mounting holes) . . . . \$8 For case size CN8H

NP6L Mounting Kit (#6-32 mounting holes) . . . . \$8 Model NP6L consists of two brackets 1.5" long and two 2.5" long brackets (to extend beyond heat sink).

#### - FOR DIN RAIL MOUNTING (See page 91 for illustration.) For Rear Mounting

GR35DIN Mounting Kit ..... \$15.00

Fits on case sizes RM6, CM6, CM9.

(Can be used, but not recommended, on case size CM13.)

NPR35DIN Mounting Kit ..... \$15.00 Fits on case sizes CN8H, CN8T.

For Horizontal Mounting

CH35DIN Mounting Kit ..... \$15.00

Fits on case size RM6.

GH35DIN Mounting Kit ..... \$15.00

Fits on case sizes CM6, CM9, CM13.

NPH35DIN Mounting Kit ..... \$15.00

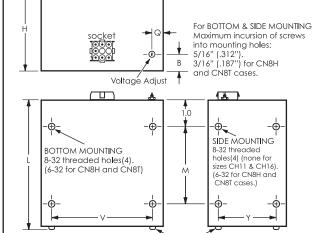
Fits on case sizes CN8H, CN8T.

#### **For Vertical Mounting**

NPV35DIN Mounting Kit ..... \$15.00 Fits on case sizes CN8H, CN8T.

#### POWER SUPPLIES

(Two in each Modular Redundant System)

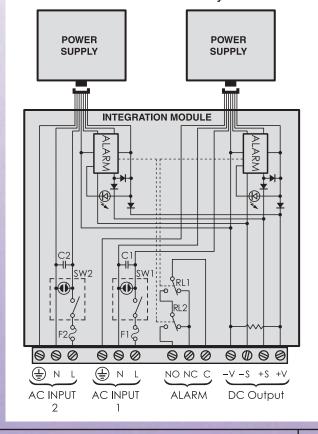


For **REAR MOUNTING**, remove original screws(4) and use 8-32 Type F self-tapping screws. They should extend at least

For REAR MOUNTING of CN8H and CN8T cases, remove original 6-32 screws(4). These screws may then be used for mounting, provided they extend at least 1/4" (0.250") into the power supply case.

Case Size		W	Н	М	٧	Υ	Q	В	Approx. Weight
CM6	6.59	5.12	3.44	4.0	4.5	3.0	.5	.75	4 lb. 4 oz.
CM9	9.25	5.12	3.44	6.0	4.5	3.0	.5	.75	7 lb. 4 oz.
CM13	13.25	5.12	3.44	10.0	4.5	3.0	.5	.75	11 lb.
CH11	11.25	7.37	5.12	8.0	6.75	4.56	1.12	1.25	18 lb. 4 oz.
									26 lb.
CN8H	8.47	4.68	1.68	5.0	3.12	1.31	2.87	1.31	3 lb. 14 oz.
CN8T	8.47	3.84	1.68	5.0	3.12	1.31	2.87	1.31	3 lb. 2 oz.

#### Simplified Diagram for Modular Redundant Systems







#### SWITCHING REGULATED

# MODULAR REDUNDANT SYSTEMS (Power Factor Correction and Universal Input)

AC-DC single output

- Shipped Within 9 Days
- Five Year Warranty

These systems have the versatility to be mounted in a wide variety of ways - within a system cabinet, on a DIN rail or to a wall. Another benefit is that the three modules need not be mounted together, so that if a control panel is crowded, just the Integration Module may be mounted there and the power supplies mounted elsewhere.



For more Specifications and information, see pages 16 & 17.

System Description: Each Modular Redundant DC Power System consists of three units: two identical power supplies connected to an Integration Module by 24" long cables. The Integration Module includes the diodes for isolating the power supply outputs, AC input switches, input fuses, LED 'output present' indicators, failure alarm circuits, and the umbilical cables which plug into the power supplies. Connections for the AC inputs, redundant DC output and failure alarm relays are on a screw terminal strip.

**Mounting:** Each module has threaded mounting holes which permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, use an Accessory Mounting Kit (see page 27).

**Interconnection:** The Integration Module has two 24 inch long cables.

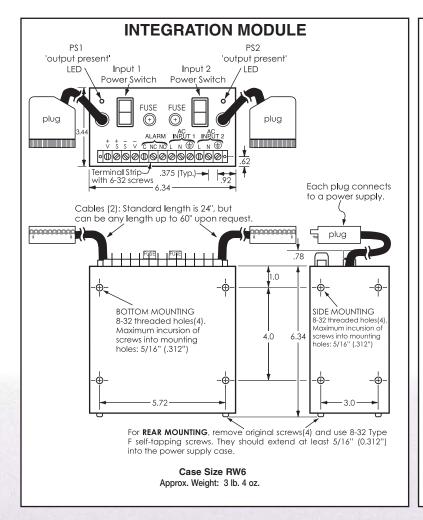
#### **OPTIONS**

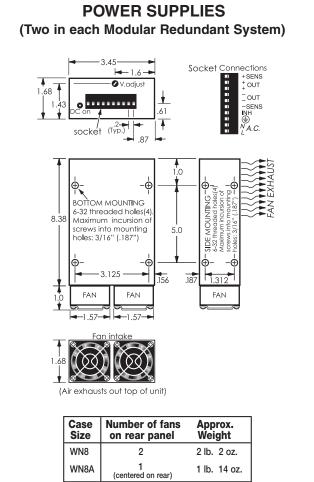
**Cable lengths:** Although 24" is standard, any other length from 12" to 60" may be ordered as an option. To order, add suffix "C??" to model number and \$60.00 to price. Replace the "??" with the cable length desired. For example, if you are ordering Model RM24WN8 with 4 foot (48") cables, the model number would be RM24WN8C48, and the price would be \$1250.00+\$60.00=\$1310.00.

Simplified Diagram for Modular Redundant Systems: See page 25

#### **Switching Regulated MODULAR REDUNDANT SYSTEMS**

	Α'		ent	Ripple					sizes
Range ±V		nps. at	71°C	<u> </u>	IHz BW)	(\$)	Model	Integration Module	Power Supplies (2)
.5	15.4							RW6	WN8A
.5	24	20.5	16.8	10	50	1250	RM3.3WN8	RW6	WN8
.5	15.4	13	10.7	10	50 50	1100	RM5WN8A	RW6	WN8A WN8
									WN8A
.5	23	19.5	16.1	15	100	1250	RM8WN8	RW6	WN8
.5 .5	13.5 21	11.5 18.5	9.5 15	15 15	100 100	1100 1250	RM10WN8A RM10WN8	RW6 RW6	WN8A WN8
.5 .5	12.3 20	10.5 17	8.6 14	15 15	100 100	1100 1250	RM12WN8A RM12WN8	RW6 RW6	WN8A WN8
.5	11.3	9.7	7.9	15	100	1100 RM13WN8A		RW6	WN8A WN8
.5	10.2	8.7	7.1	15	100	1100	RM15WN8A	RW6	WN8A WN8
.5	7.6	6.5	5.3	15	100	1100	RM20WN8A	RW6	WN8A WN8
$\overline{}$		-							WN8A
.5	11.5	9.8	8	15	100	1250	RM24WN8	RW6	WN8
.5 .5	5.9 9.5	5 8.1	4.1 6.7	15 15	100 100	1100 1250	RM28WN8A RM28WN8	RW6 RW6	WN8A WN8
.5 .5	5.2 8.3	4.5 7	3.7 5.8	25 25	150 150	1100 1250	RM32WN8A RM32WN8	RW6 RW6	WN8A WN8
.5 .5	4.2 6.8	3.6 5.8	3 4.8	25 25	150 150	1100 1250	RM40WN8A RM40WN8	RW6 RW6	WN8A WN8
.5 .5	3.5 5.7	3 4.9	2.5 4	25 25	150 150	1100 1250	RM48WN8A RM48WN8	RW6 RW6	WN8A WN8
1	3 4.5	2.5 3.8	2.1 3.1	50 50	150 150	1100 1250	RM55WN8A RM55WN8	RW6 RW6	WN8A WN8
1	2.8 4.2	2.3	1.9	50 50	150 150	1100 1250	RM60WN8A RM60WN8	RW6	WN8A WN8
1	2.4 3.6	2 3.1	1.7	67	200	1100	RM70WN8A	RW6	WN8A WN8
1 1	2.1 3.1	1.7	1.4	67 67	200 200	1100 1250	RM80WN8A RM80WN8	RW6 RW6	WN8A WN8
1 1	1.8 2.8	1.5 2.4	1.3	100 100	300 300	1100 1250	RM90WN8A RM90WN8	RW6 RW6	WN8A WN8
1 1	1.7 2.5	1.4	1.2 1.8	150 150	450 450	1100 1250	RM100WN8A RM100WN8	RW6 RW6	WN8A WN8
1	1.5	1.3	1.1	150	450	1100	RM110WN8A	RW6	WN8A WN8
1	1.4	1.2	1	150 450		1100	RM120WN8A	RW6	WN8A WN8
1 1	1.3	1.1 1.7	0.9 1.4	150 150	450 450	1100 1250	RM125WN8A RM125WN8	RW6 RW6	WN8A WN8
	±V 5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.	±V 40°C  .5 15.4 .5 24  .5 15.4 .5 24  .5 13.5 .5 21  .5 12.3 .5 12.3 .5 12.3 .5 10.2 .5 16.5  .5 7.6 .5 7.6 .5 7.2 .5 7.2 .5 11.5  .5 5.9 .5 8.3  .5 4.2 .5 16.5  .5 12.7  .	±V         40°C         55°C           .5         15.4         13           .5         24         20.5           .5         15.4         13           .5         24         20.5           .5         14.4         12           .5         13.5         11.5           .5         12.3         19.5           .5         12.3         10.5           .5         12.3         15.7           .5         11.3         9.7           .5         11.3         9.7           .5         10.2         8.7           .5         10.2         8.7           .5         10.2         8.7           .5         11.5         9.8           .5         7.2         6.1           .5         12.7         10.7           .5         7.2         6.1           .5         9.5         8.1           .5         5.9         5           .5         8.3         7           .5         4.2         3.6           .5         3.5         3           .5         3.5         3	±V         40°C         55°C         71°C           .5         15.4         13         10.7           .5         15.4         13         10.7           .5         24         20.5         16.8           .5         14.4         12         10           .5         23         19.5         16.1           .5         13.5         11.5         19.5           .5         12.3         10.5         8.6           .5         20         17         14           .5         11.3         9.7         7.9           .5         12.3         10.5         8.6           .5         20         17         14           .5         11.3         9.7         7.9           .5         10.2         8.7         7.1           .5         10.2         8.7         7.1           .5         10.2         8.7         7.1           .5         7.2         6.1         5           .5         7.2         6.1         5           .5         9.5         8.1         6.7           .5         9.5         8.1         6.7 </td <td>±V         40°C         55°C         71°C         RMS           .5         15.4         13         10.7         10           .5         15.4         13         10.7         10           .5         15.4         13         10.7         10           .5         14.4         12         10         15           .5         23         19.5         16.1         15           .5         23         19.5         16.1         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         10.2         8.7         7.9         15           .5         10.2         8.7         7.1         15           .5         10.2         8.7         7.1         15           .5         10.2         8.7         7.1         15           .5         12.7         10.7         8.8         15           .5         12.7         10.7<td>±V         40°C         55°C         71°C         RMS         P-P           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         24         20.5         16.8         10         50           .5         14.4         12         10         15         100           .5         23         19.5         16.1         15         100           .5         21         18.5         15         15         100           .5         21         18.5         15         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100</td><td>±V         40°C         55°C         71°C         RMS         P-P         Price           .5         15.4         13         10.7         10         50         1100           .5         24         20.5         16.8         10         50         1250           .5         15.4         13         10.7         10         50         1250           .5         24         20.5         16.8         10         50         1250           .5         14.4         12         10         15         100         1250           .5         13.5         11.5         9.5         15         100         1250           .5         21         18.5         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         11.3         9.7         7.9         15         100         1250           .5         16.5         14</td><td>±V         40°C         55°C         71°C         RMS         P-P         Price         Model           .5         15.4         13         10.7         10         50         1100         RM3.3WN8A           .5         24         20.5         16.8         10         50         1250         RM3.3WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1250         RM5WN8A           .5         23         19.5         16.1         15         100         1250         RM5WN8A           .5         13.5         11.5         9.5         15         100         1250         RM10WN8           .5         12.3         10.5         8.6         15         100         1100         RM10WN8           .5         12.3         10.5         1.6         15         100         1100         RM10WN8           .5         11.3         9.7         7.9         15         100<!--</td--><td>  2V   40°C   55°C   71°C   RMS   P-P   Price   Model   Module    </td></td></td>	±V         40°C         55°C         71°C         RMS           .5         15.4         13         10.7         10           .5         15.4         13         10.7         10           .5         15.4         13         10.7         10           .5         14.4         12         10         15           .5         23         19.5         16.1         15           .5         23         19.5         16.1         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         12.3         10.5         8.6         15           .5         10.2         8.7         7.9         15           .5         10.2         8.7         7.1         15           .5         10.2         8.7         7.1         15           .5         10.2         8.7         7.1         15           .5         12.7         10.7         8.8         15           .5         12.7         10.7 <td>±V         40°C         55°C         71°C         RMS         P-P           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         24         20.5         16.8         10         50           .5         14.4         12         10         15         100           .5         23         19.5         16.1         15         100           .5         21         18.5         15         15         100           .5         21         18.5         15         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100</td> <td>±V         40°C         55°C         71°C         RMS         P-P         Price           .5         15.4         13         10.7         10         50         1100           .5         24         20.5         16.8         10         50         1250           .5         15.4         13         10.7         10         50         1250           .5         24         20.5         16.8         10         50         1250           .5         14.4         12         10         15         100         1250           .5         13.5         11.5         9.5         15         100         1250           .5         21         18.5         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         11.3         9.7         7.9         15         100         1250           .5         16.5         14</td> <td>±V         40°C         55°C         71°C         RMS         P-P         Price         Model           .5         15.4         13         10.7         10         50         1100         RM3.3WN8A           .5         24         20.5         16.8         10         50         1250         RM3.3WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1250         RM5WN8A           .5         23         19.5         16.1         15         100         1250         RM5WN8A           .5         13.5         11.5         9.5         15         100         1250         RM10WN8           .5         12.3         10.5         8.6         15         100         1100         RM10WN8           .5         12.3         10.5         1.6         15         100         1100         RM10WN8           .5         11.3         9.7         7.9         15         100<!--</td--><td>  2V   40°C   55°C   71°C   RMS   P-P   Price   Model   Module    </td></td>	±V         40°C         55°C         71°C         RMS         P-P           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         15.4         13         10.7         10         50           .5         24         20.5         16.8         10         50           .5         14.4         12         10         15         100           .5         23         19.5         16.1         15         100           .5         21         18.5         15         15         100           .5         21         18.5         15         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100         .5         100	±V         40°C         55°C         71°C         RMS         P-P         Price           .5         15.4         13         10.7         10         50         1100           .5         24         20.5         16.8         10         50         1250           .5         15.4         13         10.7         10         50         1250           .5         24         20.5         16.8         10         50         1250           .5         14.4         12         10         15         100         1250           .5         13.5         11.5         9.5         15         100         1250           .5         21         18.5         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         12.3         10.5         8.6         15         100         1250           .5         11.3         9.7         7.9         15         100         1250           .5         16.5         14	±V         40°C         55°C         71°C         RMS         P-P         Price         Model           .5         15.4         13         10.7         10         50         1100         RM3.3WN8A           .5         24         20.5         16.8         10         50         1250         RM3.3WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1100         RM5WN8A           .5         24         20.5         16.8         10         50         1250         RM5WN8A           .5         23         19.5         16.1         15         100         1250         RM5WN8A           .5         13.5         11.5         9.5         15         100         1250         RM10WN8           .5         12.3         10.5         8.6         15         100         1100         RM10WN8           .5         12.3         10.5         1.6         15         100         1100         RM10WN8           .5         11.3         9.7         7.9         15         100 </td <td>  2V   40°C   55°C   71°C   RMS   P-P   Price   Model   Module    </td>	2V   40°C   55°C   71°C   RMS   P-P   Price   Model   Module





#### **SPECIFICATIONS**

**Input Voltage:** 90-265 VAC, 49-420 Hz, single phase. (A separate set of AC input terminals is provided for each power supply, so that if two sources of AC input power are available, one may be used for each supply and so reduce the possibility of output dropout due to loss of input power.)

**Power Factor:** 0.99 typical at 115 VAC, 60Hz and full load. Complies with EN61000-3-2.

**Drift:** ±0.1% typical over 8 hours, after 30 minute warmup.

**Output Monitoring:** 'Output Present' green LEDs are located on each power supply (DC on) and on the Integration Module.

Inrush current: Cold start, (thermistor limiter) 20A peak @ 115 VAC; 40A peak @ 230 VAC.

Startup Time: 800 mS typical.

**Remote Sensing:** Compensates up to 0.5 volt drop per output line (1 volt for 55 to 125 volt models), within the limits of the output voltage adjustment range.

Holdup Time: 16 mS minimum.

Transient Response: 300  $\mu S$  to return to  $\pm 1\%$  of output setting. Maximum of  $\pm 3\%$  output excursion following a load step change from 50% to 100%.

Switching Frequency: 100 kHz (Typical).

Isolation: Input to output, input to case; 500 VAC.

Output to case; 300 VAC.

Thermal Protection: Thermostat, self-resetting.

**Cooling:** Forced-air cooled; air enters rear of power supply and exits from top.

#### **ACCESSORY MOUNTING KITS**

**- FOR WALL MOUNTING** (See page 91 for illustration.)

These kits provide a way of mounting power supplies on a wall or panel when the other side of the mounting surface is inaccessible. Each kit consists of four aluminum brackets and four machine screws for fastening them to the power supply, effectively adding mounting flanges to the power supply.

For case size RW6

GB8 Mounting Kit (#8-32 mounting holes) . . . . . \$8 For case sizes WN8, WN8A

NP6 Mounting Kit (#6-32 mounting holes) . . . . . \$8

- FOR DIN RAIL MOUNTING (See page 91 for illustration.)

For Rear Mounting

GR35DIN Mounting Kit ..... \$15.00

Fits on case size RW6.

For Horizontal Mounting

CH35DIN Mounting Kit ..... \$15.00

Fits on case size RW6.

NPH35DIN Mounting Kit ..... \$15.00

Fits on case sizes WN8, WN8A.

For Vertical Mounting

NPV35DIN Mounting Kit ..... \$15.00 Fits on case sizes WN8, WN8A.





#### single & dual tracking outputs

#### **Rack Mounting**

LINEAR REGULATED AC-DC

- Shipped Within 9 Days
- All Models U.L. Recognized
- Five Year Warranty



**Acopian rack-mounting power supplies** feature excellent regulation and ripple specifications in 101 models with outputs up to 150 volts and 60 amps. Metering and overvoltage protection are available as

options. These power supplies are constructed in sturdy extruded aluminum assemblies designed expressly for mounting in standard 19" wide RETMA cabinet racks. The front panels are finished in light gray enamel.

#### **SPECIFICATIONS**

**Input Voltage:** 105-125 VAC, 50-400 Hz, single phase. **Remote Voltage Sensing:** Provision for sensing the output voltage across the load is a standard feature.

#### Polarity:

**Single Output Models:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

**Dual Output Models:** Positive output, common, negative output.

#### **Temperature Coefficient:**

Single Output Models: 0.015%/°C (Typical). Dual Output Models: 0.02%/°C (Typical).

#### **Ambient Operating Temperature:**

Single Output Models: -20 to +55°C. Dual Output Models: -10 to +55°C.

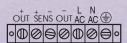
Storage Temperature: -55 to +85°C.

Overload/Short Circuit Protection: Foldback current

limiting with automatic recovery.

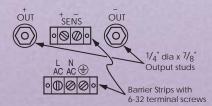
#### **CONNECTIONS** (Single Output models):

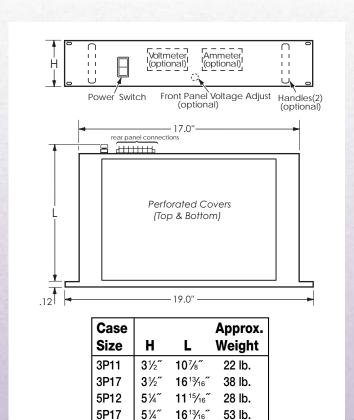
Case sizes 3P11 and 5P12:



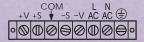
3P11 Barrier Strip with 6-32 terminal screws 5P12 Barrier Strip with 8-32 terminal screws

Case sizes 3P17 and 5P17:





#### **CONNECTIONS** (Dual Output models):



Barrier Strip with 6-32 terminal screws

#### SINGLE OUTPUT

Nominal Output Voltage	Adjust Range ± V		Current s. at 55°C	Regul Load* ±%	ation Line* ±%	Ripple mV RMS	(\$) Price	Model	Case Size
1.5	.5	20	20	.005	.005	.25	\$575	1.5PT20	3P11
1.5	.5	32	27	.005	.005	.25	\$700	1.5PH32	5P12
1.5	.25	60	47	.05	.05	1	\$1015	1.5PH60	5P17
2 2	.5	20	20	.005	.005	.25	\$575	2PT20	3P11
	.5	30	25	.005	.005	.25	\$695	2PH30	5P12
3	.5	20	20	.005	.005	.25	\$575	3PT20	3P11
3	.5	30	25	.005	.005	.25	\$700	3PH30	5P12
3	.25	60	47	.05	.05	1	\$1015	3PH60	5P17
3.3	.5	20	20	.005	.005	.25	\$575	3.3PT20	3P11
3.3	.5	32	27	.005	.005	.25	\$700	3.3PH32	5P12
3.3	.25	60	47	.05	.05	1	\$1015	3.3PH60	5P17
5	.5	20	20	.005	.005	.25	\$575	5PT20	3P11
5	.5	32	27	.005	.005	.25	\$700	5PH32	5P12
5	.25	48	37	.05	.05	1	\$875	5PT48	3P17
5	.25	60	47	.05	.05	1	\$1015	5PH60	5P17
6 6 6	.5 .5 .25 .25	20 28 47 58	20 23 36 45	.005 .005 .05 .05	.005 .005 .05 .05	.25 .25 1	\$575 \$700 \$875 \$1015	6PT20 6PH28 6PT47 6PH58	3P11 5P12 3P17 5P17
7	.5	20	20	.005	.005	.25	\$575	7PT20	3P11
8	.5	20	20	.005	.005	.25	\$575	8PT20	3P11
8	.5	28	23	.005	.005	.25	\$700	8PH28	5P12
8	.25	54	42	.05	.05	1	\$1015	8PH54	5P17
9	.5	20	20	.005	.005	.25	\$575	9PT20	3P11
9	.5	41	32	.05	.05	1	\$875	9PT41	3P17
9	.5	52	41	.05	.05	1	\$1015	9PH52	5P17
10	.5	20	20	.005	.005	.25	\$575	10PT20	3P11
10	.5	25	20	.005	.005	.25	\$700	10PH25	5P12
10	.5	50	39	.05	.05	1	\$1015	10PH50	5P17
12 12 12 12	.5 .5 .5	17 22 33 45	17 22 26 35	.005 .005 .05 .05	.005 .005 .05 .05	.25 .25 1 1	\$575 \$700 \$875 \$1015	12PT17 12PH22 12PT33 12PH45	3P11 5P12 3P17 5P17
13	.5	16	16	.005	.005	.25	\$575	13PT16	3P11
13	.5	43	34	.05	.05	1	\$1015	13PH43	5P17
14	.5	12	12	.005	.005	.25	\$575	14PT12	3P11
15	.5	10	10	.005	.005	.25	\$575	15PT10	3P11
15	.5	19	16	.005	.005	.25	\$700	15PH19	5P12
15	.5	25	20	.05	.05	1	\$875	15PT25	3P17
15	.5	40	31	.05	.05	1	\$1015	15PH40	5P17
16	.5	10	10	.005	.005	.25	\$575	16PT10	3P11
18 18 18 18	.5 .5 .5	10 18 24 36	10 15 19 28	.005 .005 .05 .05	.005 .005 .05 .05	.25 .25 1 1	\$575 \$700 \$875 \$1015	18PT10 18PH18 18PT24 18PH36	3P11 5P12 3P17 5P17
20 20 20 20 20	.5 .5 .5	10 16 23 32	10 14 18 25	.005 .005 .05 .05	.005 .005 .05	.25 .25 1 1	\$575 \$700 \$875 \$1015	20PT10 20PH16 20PT23 20PH32	3P11 5P12 3P17 5P17
22	.5	10	10	.005	.005	.25	\$575	22PT10	3P11

Nominal	Adjust	Output Current		Regul	ation	Ripple			
Output	Range	<u> </u>	s. at	Load	Line	mV	(\$)	l <u></u>	Case
Voltage	± V	40°C	55°C	±%	±%	RMS	Price	Model	Size
24	.5	10	10	.005	.005	.25	\$575	24PT10	3P11
24	.5	15	13	.005	.005	.25	\$700	24PH15	5P12
24 24	.5 .5	20 30	16 23	.05 .05	.05 .05	1	\$875 \$1015	24PT20 24PH30	3P17 5P17
25	.5	10	10	.005	.005	.25	\$575	25PT10	3P11
26	.5	10	10	.005	.005	.25	\$575	26PT10	3P11
28	.5	10	10	.005	.005	.25	\$575	28PT10	3P11
28	.5	14	12	.005	.005	.25	\$700	28PH14	5P12
28	.5	19	15	.05	.05	1	\$875	28PT19	3P17
28	.5	28	22	.05	.05	1	\$1015	28PH28	5P17
30	.5	10	10	.005	.005	.25	\$575	30PT10	3P11
30	.5	14	12	.005	.005	.25	\$700	30PH14	5P12
32 32	.5 .5	5 10	5 10	.005 .005	.005	.25 .25	\$505 \$655	32PT5 32PT10	3P11 5P12
					-			-	
34 34	.5 .5	5 10	5 10	.005 .005	.005	.25 .25	\$515 \$660	34PT5 34PT10	3P11 5P12
35	.5	5	5	.005	.005	.25	\$525	35PT5	3P11
35	.5	10	10	.005	.005	.25	\$680	35PT10	5P12
36	.5	5	5	.005	.005	.25	\$530	36PT5	3P11
36	.5	10	10	.005	.005	.25	\$690	36PT10	5P12
38	.5	5	5	.005	.005	.25	\$540	38PT5	3P11
38	.5	10	10	.005	.005	.25	\$695	38PT10	5P12
40	.5	5	5	.005	.005	.25	\$540	40PT5	3P11
40	.5	10	10	.005	.005	.25	\$710	40PT10	5P12
45	.5	5	5	.005	.005	.25	\$550	45PT5	3P11
45	.5	10	10	.005	.005	.25	\$730	45PT10	5P12
48	.5	5	5	.005	.005	.25	\$550	48PT5	3P11
48 48	.5 .5	10 15	10 12	.005 .005	.005	.25 .25	\$730 \$905	48PT10 48PT15	5P12 5P17
50	.5	5	5	.005	.005	.25	\$550	50PT5	3P11
50	.5 .5	10	10	.005	.005	.25	\$730	50PT10	5P12
55	.5	5	3.8	.005	.005	.25	\$560	55PT5	3P11
55	.5	8	6	.005	.005	.25	\$745	55PT8	5P12
60	.5	5	3.8	.005	.005	.25	\$565	60PT5	3P11
60	.5	8	6	.005	.005	.25	\$760	60PT8	5P12
75	1	4	3	.01	.01	1	\$575	75PT4	3P11
75	1	5.6	4.2	.01	.01	1	\$790	75PT5	5P12
90	1	3.3	2.5	.01	.01	1	\$590	90PT3	3P11
90	1	4.4	3.3	.01	.01	1	\$795	90PT4	5P12
100 100	1 1	3 4	2.2 3	.01 .01	.01 .01	1	\$600 \$810	100PT3 100PT4	3P11 5P12
		_					_		
120 120	1 1	2.5 3.5	1.8 2.6	.01 .01	.01 .01	1	\$610 \$820	120PT2 120PT3	3P11 5P12
125	1	2.5		.01	.01	1	\$620	125PT2	3P11
125	1	3.5	1.8 2.6	.01	.01	1	\$835	125PT2 125PT3	5P11
150	1	2.3	1.7	.01	.01	1	\$620	150PT2	3P11
150	1	3	2.2	.01	.01	1	\$835	150PT3	5P12

#### **DUAL TRACKING OUTPUTS**

		DOAL IIIAORIII OOII OIO								
	Nominal	Adjust	Amps. p	er Output	Regul	ation	Ripple			
	Output	Range	at		Load	Line	m۷	(\$)		Case
	Voltages	±ν	40°C	55°C	±%	±%	RMS	Price	Model	Size
	±12	.5	7	5.6	.1	.1	1.5	\$590	PD12-700	3P11
	±12	.5	9	7.2	.1	.1	1.5	\$710	PD12-900	5P12
	±15	.5	7	5.6	.1	.1	1.5	\$590	PD15-700	
ĺ	+15	.5	9	7.2	1.1	1 .1	1.5	\$710	PD15-900	5P12

#### **OPTIONS**

**EXAMPLE:** The Model 5PT20 equipped with all options is designated as the Model V5PT20AFHMP-230. (List suffix letters in alphabetical sequence.)

**Overvoltage Protection:** An internally installed and preset overvoltage protector is available. On dual output models, if either output fails, both outputs are 'crowbarred'. To order, add prefix "V" to the model number and increase price as follows:

Outputs of	1.5-70V	75-150V
Case size 3P11	\$35.00	\$45.00
Other case sizes	\$85.00	\$95.00

**Front Panel Voltage Adjustment:** Standard models have a voltage adjustment located at the rear. A voltage control mounted on the front panel is available as an option. To order, add suffix "P" to the model number and \$15.00 to price.

Handles: Add suffix "H" to model number and \$30.00 to price.

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

#### Metering (Single Output Models):

**Ammeter:** Add suffix "A" to model number and \$60.00 to price. **Voltmeter:** Add suffix "F" to model number and \$60.00 to price.

#### Metering (Dual Output Models):

Ammeters: One for each output. Add suffix "A" to model number and \$120.00 to price. "A" and "F" options cannot be combined in one power supply.

**Voltmeters:** One for each output. Add suffix "F" to model number and \$120.00 to price. "A" and "F" options cannot be combined in one power supply.

**Voltmeter and Ammeter:** Each with switch for selecting output to be monitored. Add suffix "G" to model number and \$170.00 to price.

**230 Volt Input:** For operation on inputs of 210 to 250 VAC, 50-400 Hz. Add suffix "–230" to model number and \$40.00 to price. The "–230" option requires two additional days.



<sup>\*</sup>or 2 mv, whichever is greater.



#### wide adjust output

#### **Rack Mounting**

LINEAR REGULATED AC-DC

(fixed & adjustable current limiting)

- Shipped Within 9 Days
- U.L. Recognized
- Five Year Warranty

Similar to the rack mounting power supplies listed on pages 28 and 29, but with broadened output voltage ranges. All models may be programmed through their voltage ranges by means of external resistance. Models with adjustable current limiting have a constant-voltage/constant-current crossover characteristic, and so may be used as constant current sources.



**Input Voltage:** 105-125 VAC, 50-400 Hz, single phase.

#### Regulation, Ripple (in constant voltage mode):

Line Regulation: ±0.005% or 2 mV, whichever is greater. Load Regulation: ±0.005% or 2 mV, whichever is greater. Ripple: 0.25 mV rms.

Rippie: 0.25 mv ms.

#### Regulation, Ripple (in constant current mode):

Line Regulation: ±0.1% or 2 mA. Load Regulation: ±0.2% or 5 mA.

Ripple: 0.1% rms.

**Remote Voltage Sensing:** Provision for sensing the output voltage across the load, to compensate voltage drops in output wiring, is a standard feature.

**Remote Voltage Programming:** The output voltage may be controlled by means of external resistance connected in series with the – S lead.

**Voltage Programming Coefficient:** See table. Calibration tolerance, ± 2%.

**Current Limiting/Programming:** Models with fixed current limiting have a rolloff characteristic with automatic recovery. All others have current limiting with a constant-voltage/constant-current crossover characteristic.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

**Controls:** Coarse and fine voltage adjustments, and the current limit adjustment, are located at the rear of the assembly.

Temperature Coefficient (in constant voltage mode): 0.02%/°C (Typical).

Ambient Operating Temperature: -20 to +71°C.

Storage Temperature: -55 to +85°C.



#### **OPTIONS**

**Overvoltage Protection:** An internally mounted overvoltage protection circuit, set approximately 20% above the maximum output voltage rating of the supply, is available on all models. To order, add prefix "V" to the model number, and increase standard price as follows:

Maximum output of	6-50V	100V
All case sizes except 5P17	\$35.00	\$45.00
Case size 5P17	\$85.00	

Remote Current Limiting Adjustment: All models having numbers beginning with the letter P have a built in current limit control. Provision for control of the current limit setting by adjustment of an external resistance is available as an option. To order, add the prefix letter "E" to the model number, and add \$25.00 to the standard price.

The current limit setting is inversely related to resistance. Use a 200 ohm,  $\frac{1}{2}$  W potentiometer.

**Ammeter:** Add suffix "A" to model number and \$60.00 to price. **Voltmeter:** Add suffix "F" to model number and \$60.00 to price. **Handles:** Add suffix "H" to model number and \$30.00 to price.

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**Front Panel Voltage Controls:** For voltage controls (coarse and fine) mounted on the front panel, instead of the standard screwdriver-slot adjustments at the rear, add suffix "P" to the model number and \$25.00 to price.

**Front Panel Current Limiting Control:** For adjustable current limiting models, a current limit control can be mounted on the front panel. Add suffix "Y" to the model number and \$15.00 to price.

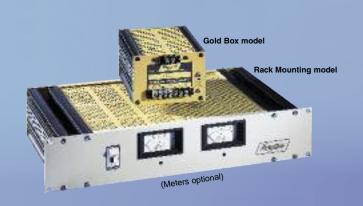
**230 Volt Input:** For operation on inputs of 210 to 250 VAC, 50-400 Hz. Add suffix "–230" to model number and \$40.00 to price. The "–230" option requires two additional days.

#### Power Supplies Programmable with a 0-10 Vdc Control Voltage

These power supplies have the broad adjustment capability required for analog instrumentation and circuitry, process controls, basic research, and similar applications.

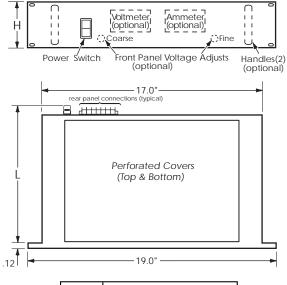
The output voltage may be manually controlled either at the power supply or remotely, or it may be programmed with the analog output from a PLC or digital-to-analog converter.

See pages 60 and 61



Output Voltage		put Cur mps. at		Voltage Prgmg. Coeff.	Case	Voltage Programmable   Voltage Programma   Fixed Current Limiting   Adjust. Current Lim			
Range	40°C	55°C	71°C	$(\Omega/V)$	Size	Model	Price(\$)	Model	Price (\$)
0-6	10.0	8.0	6.0	820	3P11	A06PX10	\$575	P06PX10	\$620
0-6	16.0	12.8	9.6	820	5P12	A06PX16	\$705	P06PX16	\$750
0-6*	23.0	18.4	13.8	820	3P17	A06PX23	\$875	P06PX23	\$920
0-6*	30.0	24.0	18.0	820	5P17	A06PX30	\$1015	P06PX30	\$1060
0-15	7.0	5.6	4.2	330	3P11	A015PX7	\$575	P015PX7	\$620
0-15	10.0	8.0	6.0	330	5P12	A015PX10	\$705	P015PX10	\$750
0-15*	13.0	10.4	7.8	330	3P17	A015PX13	\$875	P015PX13	\$920
0-30	4.0	3.2	2.4	160	3P11	A030PX4	\$575	P030PX4	\$620
0-30	5.0	4.0	3.0	160	5P12	A030PX5	\$705	P030PX5	\$750
0-30*	7.0	5.6	4.2	160	3P17	A030PX7	\$875	P030PX7	\$920
0-30*	9.0	7.2	5.4	160	5P17	A030PX9	\$1015	P030PX9	\$1060
0-50	2.4	1.9	1.5	1000	3P11	A050PX2	\$575	P050PX2	\$620
0-50	3.0	2.4	1.8	1000	5P12	A050PX3	\$705	P050PX3	\$750
0-50*	5.0	4.0	3.0	1000	5P17	A050PX5	\$1015	P050PX5	\$1060
0-100*	1.2	.9	.7	500	3P11	A0100PX1.2	\$635	P0100PX1.2	\$680
0-100*	1.5	1.2	.9	500	5P12	A0100PX1.5	\$820	P0100PX1.5	\$865

<sup>\*</sup>Not U.L. recognized when this catalog was published.



Case			Approx.
Size	Н	L	Weight
3P11	3½″	10¾″	16 lb.
3P17	3½″	<b>16</b> <sup>13</sup> / <sub>16</sub> "	26 lb.
5P12	5¼″	<b>11</b> 15/16″	20 lb.
5P17	5¼″	<b>16</b> <sup>13</sup> / <sub>16</sub> "	30 lb.

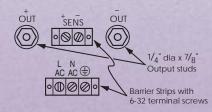
#### **CONNECTIONS:**

Case sizes 3P11 and 5P12:

OUT SENS OUT AC AC ®

3P11 Barrier Strip with 6-32 terminal screws 5P12 Barrier Strip with 8-32 terminal screws

Case sizes 3P17 and 5P17:





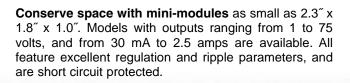


#### single output

### Mini Encapsulated - PC Board mounting

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- One Year Warranty





#### STANDARD FEATURES

- May be used in series
- · No derating or heat sinking required
- Short circuit protected
- · Small, lightweight

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 47 to 420 Hz, single phase.

**Output Voltage Setting:** Output is factory preset to within ±2% (1 to 9 volt models) or ±1% (10 to 75 volt models) of the nominal output voltage.

T/C terminal (Output Voltage Trim Adjustment): The T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or – terminal.

**Polarity:** Output is floating. Either positive or negative terminal may be grounded.

**Ambient Operating Temperature:** -20 to +71°C. No derating required.

Storage Temperature: -55 to +85°C.

**Temperature Coefficient:** From 9 to 75 volts, typically 0.015%/°C; 1 to 8 volts, 0.03%/°C.

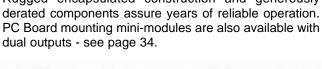
**Impedance:** 0.07 ohms at 1 kHz and 0.2 ohms at 10 kHz (approx.).

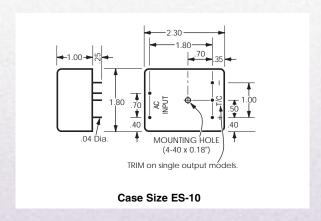
Weight: 7 oz. (Case size ES-10) 13 oz. (Case size EL-10) 1 lb. 3 oz. (Case size EL-13) 1 lb. 15 oz. (Case size EL-20)

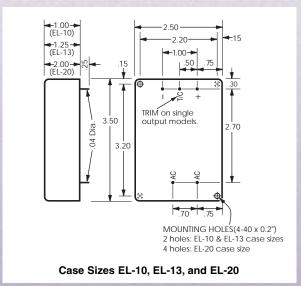
**Mounting:** May be mounted on printed circuit board or in socket (see page 34).

#### **OPTIONS**

**230 Volt Input:** All models can be alternately furnished for operation on an input of 210 to 250 VAC, 47-420 Hz. To order, add suffix "–230" to model number and \$10.00 to price. Requires two additional days.







#### SINGLE OUTPUT, FOR PC BOARD MOUNTING

(For Mini Encapsulated power supplies with higher wattage outputs than those shown below, see pages 38-39.)

Nominal	Output	Regulation		Ripple			
Output Voltage	Current Amps.	Load ±%	Line ±%	mV RMS	(\$) Price	Model	Case Size
1	.250 .500	.1 .2	.05 .05	0.5 1	67 86	1E25 1E50A	ES-10 EL-10
1.5	.250	.1	.05	0.5	67	1.5E25	ES-10
1.5 1.5	.500 1.0	.2 .3	.05 .05	1	86 112	1.5E50A 1.5E100	EL-10 EL-13
1.5	2.5	.3	.05	i	149	1.5E100 1.5E250	EL-13 EL-20
2 2	.200 .400	.1 .2	.05 .05	0.5 1	67 86	2E20 2E40A	ES-10 EL-10
3 3	.250 .500	.1 .2	.05 .05	0.5 1	67 86	3E25 3E50A	ES-10 EL-10
3.3	.250	.05	.05	0.5	67	3.3E25	ES-10
3.3	.500	.1	.05	1	86	3.3E50A	EL-10
3.3 3.3	1.0 2.0	.3 .3	.05 .05	1	112 132	3.3E100 3.3E200	EL-13 EL-20
4 4	.200 .400	.05 .1	.05 .05	0.5 1	67 86	4E20 4E40A	ES-10 EL-10
5	.250	.05	.05	0.5	67	5E25	ES-10
5 5	.500 1.0	.1 .15	.05 .05	1	79 97	5E50A 5E100	EL-10 EL-13
5	1.5	.15	.05	i	112	5E150	EL-13
5 5	2.0 2.5	.15 .15	.05 .05	1	132 149	5E200 5E250	EL-20 EL-20
6	.200	.05	.05	0.5	67	6E20	ES-10
6	.400	.1	.05	1	86	6E40A	EL-10
6 6	.550 1.0	.2 .2	.05 .05	1	102 120	6E55 6E100	EL-10 EL-13
6	1.75	.15	.05	1	143	6E175	EL-20
7 7	.170 .340	.05 .1	.05 .05	0.5 1	67 86	7E17 7E34A	ES-10 EL-10
7	.450	.2	.05	i	102	7E45	EL-10
7 7	.900 1.15	.2 .15	.05 .05	1	120 143	7E90 7E115	EL-13 EL-20
8	.150	.05	.05	0.5	67	8E15	ES-10
8	.300	.1	.05	1	86	8E30A	EL-10
8 8	.700 1.1	.2 .15	.05 .05	1	120 143	8E70 8E110	EL-13 EL-20
9	.130	.05	.05	0.5	67	9E13	ES-10
9 9	.260 .450	.1 .15	.05 .05	1	86 102	9E26A 9E45	EL-10 EL-10
9	.850	.15	.05	1	120	9E85	EL-13
9	1.5	.15	.05	1 0.5	149	9E150 10E12	EL-20 ES-10
10 10	.120 .240	.02 .05	.02 .05	1	56 86	10E12 10E24A	ES-10 EL-10
10 10	.400 .750	.15 .15	.05 .05	1	102 120	10E40 10E75	EL-10 EL-13
10	1.2	.13	.05	i	149	10E120	EL-13
11	.110	.02	.02	0.5	67	11E11	ES-10
11 11	.220 .350	.05 .15	.05 .05	1	86 102	11E22A 11E35	EL-10 EL-10
11	.600	.15	.05	1	120 149	11E60	EL-13
11	.100	.02	.05	0.5	56	11E100 12E10	EL-20 ES-10
12	.150	.05	.05	0.5	74	12E15	ES-10
12 12	.200 .400	.05 .1	.05 .05	1 1	86 102	12E20A 12E40	EL-10 EL-10
12 12	.700 1.2	.1 .15	.05 .05	1	126 149	12E70 12E120	EL-13 EL-20
13	.100	.02	.02	0.5	67	13E10	ES-10
13	.200	.05	.05	1	86	13E20A	EL-10
13 13	.350 1.0	.1 .1	.05 .05	1	102 149	13E35 13E100	EL-10 EL-20
14	.100	.02	.02	0.5	67	14E10	ES-10
14 14	.200 .300	.05 .1	.05 .05	1	86 102	14E20A 14E30	EL-10 EL-10
14	.500	.1	.05	1	120	14E50	EL-13
14	1.0	.1	.05	1	149	14E100	EL-20
15 15	.100 .150	.02 .05	.02 .05	0.5 0.5	56 74	15E10 15E15	ES-10 ES-10
15 15	.200 .400	.05 .1	.05 .05	1 1	86 102	15E20A 15E40	EL-10 EL-10
15	.600	.1	.05	1	120	15E60	EL-13
15	1.0	.1	.05	1	149	15E100	EL-20
16 16	.080 .160	.02 .05	.02 .05	0.5 1	67 86	16E08 16E16A	ES-10 EL-10
16	.350	.1	.05	1	109	16E35	EL-10
16 16	.500 .900	.1 .1	.05 .05	1	126 149	16E50 16E90	EL-13 EL-20
17	.070	.02	.02	0.5	67	17E07	ES-10
17 17	.140 .450	.05 .1	.05 .05	1	86 126	17E14A 17E45	EL-10 EL-13
17	.750	.1	.05	i	149	17E75	EL-20

Naminal Output		Regulation		Ripple			
Nominal Output	Output Current	Load Line		mV	(\$)		Case
Voltage	Amps.	±%	±%	RMS	Price	Model	Size
18 18	.060 .120	.02 .05	.02 .05	0.5 1	56 86	18E06 18E12A	ES-10 EL-10
18	.270	.1	.05	1	102	18E27	EL-10
18 18	.400 .550	.1 .1	.05 .05	1	120 143	18E40 18E55	EL-13 EL-20
19	.060	.02	.02	0.5	67	19E06	ES-10
19 19	.120 .250	.05 .1	.05 .05	1	86 102	19E12A 19E25	EL-10 EL-10
19	.400	.1	.05	1	120	19E40	EL-13
19 20	.700	.1	.05	0.5	149 67	19E70	EL-20
20	.060 .120	.02 .05	.02 .05	1	86	20E06 20E12A	ES-10 EL-10
20 20	.200 .400	.1 .1	.05 .05	1	102 120	20E20 20E40	EL-10 EL-13
20	.700	.1	.05	i	149	20E70	EL-20
21 21	.060 .120	.02 .05	.02 .05	0.5 1	67 86	21E06 21E12A	ES-10 EL-10
21	.175	.1	.05	1	102	21E18	EL-10
21 21	.375 .600	.1 .1	.05 .05	1	120 143	21E38 21E60	EL-13 EL-20
22	.050	.02	.02	0.5	67	22E05	ES-10
22 22	.100 .150	.05 .1	.05 .05	1	86 102	22E10A 22E15	EL-10 EL-10
22	.300	.1	.05	1	120	22E30	EL-13
22	.500	.1 .02	.05	0.5	143 67	22E50 23E05	EL-20 ES-10
23	.100	.05	.05	1	86	23E10A	EL-10
23 23	.200 .300	.1 .1	.05 .05	1 1	102 120	23E20 23E30	EL-10 EL-13
23	.600	.1	.05	1	149	23E60	EL-20
24 24	.050 .100	.02 .05	.02 .05	0.5 1	56 86	24E05 24E10A	ES-10 EL-10
24	.200	.1	.05	1	102	24E20	EL-10
24 24	.350 .600	.1 .1	.05 .05	1 1	126 149	24E35 24E60	EL-13 EL-20
25	.050	.02	.02	0.5	67	25E05	ES-10
25 25	.100 .190	.05 .1	.05 .05	1 1	86 102	25E10A 25E19	EL-10 EL-10
25	.325	.1	.05	1	126	25E33	EL-13
25 26	.550	.1 .02	.05	1 0.5	149 67	25E55 26E04	EL-20 ES-10
26	.080	.05	.05	1	86	26E08A	EL-10
26 26	.170 .300	.1 .1	.05 .05	1 1	102 120	26E17 26E30	EL-10 EL-13
26	.450	.1	.05	1	143	26E45	EL-20
27 27	.040 .080	.02 .05	.02 .05	0.5 1	67 86	27E04 27E08A	ES-10 EL-10
27 27	.160	.1	.05	1	102	27E16	EL-10
27	.300 .500	.1 .1	.05 .05		120 149	27E30 27E50	EL-13 EL-20
28	.040	.02	.02	0.5	56	28E04	ES-10
28 28	.080 .150	.05 .1	.05 .05	1	86 102	28E08A 28E15	EL-10 EL-10
28 28	.300 .500	.1 .1	.05 .05	1	126 149	28E30 28E50	EL-13 EL-20
30	.080	.02	.02	1	90	30E08A	EL-13
32	.070	.02	.02	1	90	32E07A	EL-13
34	.060	.02	.02	1	90	34E06A	EL-13
35	.050	.02	.02	1	90	35E05A	EL-13
36	.050	.02	.02	1	90	36E05A 38E04A	EL-13
38 40	.040	.02	.02	1	90	38E04A 40E03A	EL-13 EL-13
40	.060	.02	.02	1	112	40E06A	EL-13
42	.030	.02	.02	1	90	42E03A	EL-13
44	.030	.02	.02	1	90	44E03A	EL-13
45	.030	.02	.02	1	90	45E03A 48E03A	EL-13 EL-13
48	.050	.02	.02	1	112	48E05A	EL-13
50	.030	.02	.02	1	90	50E03A	EL-13
50	.050	.02	.02	1	112 112	50E05A 55E04A	EL-13 EL-13
60	.050	.02	.02	1	112	60E05A	EL-13
65	.050	.02	.02	1	112	65E05A	EL-13
70	.040	.02	.02	1	112	70E04A	EL-13
75	.030	.02	.02	1	112	75E03A	EL-13
185 185	.025 .050	Unregi Unregi		2V 3.5V	56 79	NX-25A NX-50	EL-10 EL-13
	.000	Jinegi		J.5V	,,,	1474-00	



dual tracking outputs

### Mini Encapsulated - PC Board mounting

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- One Year Warranty



These dual output mini-modules are compact and convenient sources of the voltages required to power operational amplifiers and related circuits. They may be mounted directly on printed circuit board assemblies, simplifying system layout and minimizing the connectors and wiring required.

#### STANDARD FEATURES

- · May be used in series
- · No derating or heat sinking required
- Short circuit protected

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 47 to 420 Hz, single phase.

Output Voltage Setting: Each output is factory preset to within ±2% (5 volt models) or ±1% (10, 12 and 15 volt models) of the nominal output voltage.

**T/C terminal:** The T/C terminal is the output Common. **Polarity:** Positive output, common, and negative output.

Ambient Operating Temperature: -20 to +71°C.

No derating required.

Storage Temperature: -55 to +85°C.

**Temperature Coefficient:** 10, 12 and 15 volt models, typically 0.015%/°C; 5 volt models, 0.03%/°C.

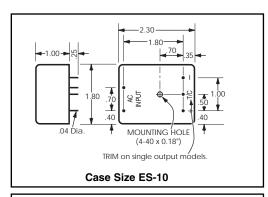
**Impedance**: 0.07 ohms at 1 kHz and 0.2 ohms at 10 kHz (approx.).

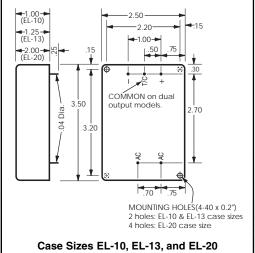
Weight: 7 oz. (Case size ES-10) 13 oz. (Case size EL-10) 1 lb. 3 oz. (Case size EL-13) 1 lb. 15 oz. (Case size EL-20)

**Mounting:** May be mounted on printed circuit board or in socket (see below).

#### **OPTIONS**

**230 Volt Input:** All models can be alternately furnished for operation on an input of 210 to 250 VAC, 47-420 Hz. To order, add suffix "–230" to model number and \$10.00 to price. Requires two additional days.





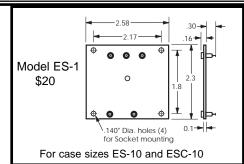
#### **DUAL TRACKING OUTPUTS**

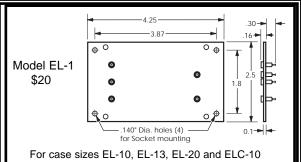
Nominal	Amps.	Regulation		Ripple			
Output Voltages	per Output	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
±5 ±5 ±5	.150 .250 .500	.1 .1 .1	.05 .05 .05	1.5 1.5 1.5	90 112 155	D5-15 D5-25 D5-50	EL-10 EL-10 EL-20
±10 ±10 ±10	.200 .300 .400	.05 .05 .1	.05 .05 .05	1 1 1	102 132 155	D10-20 D10-30 D10-40	EL-10 EL-13 EL-20
±12 ±12 ±12 ±12	.025 .050 .100 .150	.1 .1 .05 .05	.05 .05 .05 .05	1 1 1	56 67 79 90	D12-03 D12-05 D12-10A D12-15A	ES-10 ES-10 EL-10 EL-10
±12 ±12 ±12 ±12	.200 .300 .350 .500	.05 .05 .05 .1	.05 .05 .05 .05	1 1 1	102 120 132 155	D12-20 D12-30 D12-35 D12-50	EL-10 EL-13 EL-13 EL-20
±15 ±15 ±15 ±15	.025 .050 .100 .150	.1 .1 .05 .05	.05 .05 .05 .05	1 1 1	56 67 79 90	D15-03 D15-05 D15-10A D15-15A	ES-10 ES-10 EL-10 EL-10
±15 ±15 ±15 ±15	.200 .300 .350 .500	.05 .05 .05 .1	.05 .05 .05 .05	1 1 1	102 120 132 155	D15-20 D15-30 D15-35 D15-50	EL-10 EL-13 EL-13 EL-20

#### **ACCESSORY SOCKETS:**

For use with PC board mounting Mini Linears and PC board mounting DC-DC Converters.

Each of these sockets has a sturdy phenolic base with gold plated teflon-insulated contacts.





# NEMA 4X Enclosed Power Supplies



NEMA 4X enclosures provide protection against accidental contact with dangerous voltages, and protect the power supply inside from the ingress of dirt, dust, lint, and other substances. Although they do not have an airtight seal, they provide substantial protection from dripping and splashing

water and other liquids.

in a NEMA enclosure.

Please contact Acopian for more information. Call 800-523-9478.



Acopian Technical Company Easton, PA



single & dual tracking outputs

Mini Encapsulated - with screw terminals

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- One Year Warranty

**Although small in size**, these mini-modules offer high performance at modest prices. All models, with series regulated outputs ranging from 1 to 75 volts and as high as 2.5 amps, may be mounted in an area only 3.5" x 2.5". Dual output models are available with the ratings

commonly required for driving op amps and other balanced loads. Terminal strip input/output connections eliminate all need for sockets or soldering. Short circuit protection, encapsulated construction, and conservative design assure long term reliability.

#### STANDARD FEATURES

- May be used in series
- · No derating or heat sinking required
- · Short circuit protected
- · Small, lightweight

#### **SPECIFICATIONS**

**Input Voltage:** 105-125 VAC, 47 to 420 Hz, single phase. **Output Voltage Setting:** Outputs are factory preset to within  $\pm 2\%$  (1 to 9 volt models) or  $\pm 1\%$  (10 to 75 volt models) of the nominal output voltage.

**T/C terminal:** For single output models, the T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or – terminal. For dual output models, the T/C terminal is the output common.

**Polarity:** Either positive or negative terminal of a single output module may be grounded. Dual output modules have a positive/common/negative output terminal configuration.

**Ambient Operating Temperature:** –20 to +71°C. No derating required.

Storage Temperature: -55 to +85°C.

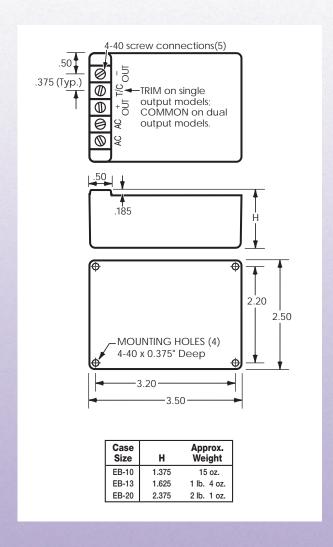
**Temperature Coefficient:** From 9 to 75 volts, typically 0.015%/°C; 1 to 8 volts, 0.03%/°C.

**Impedance:** 0.07 ohms at 1 kHz and 0.2 ohms at 10 kHz (approx.).

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. When wall-mounting or DIN rail mounting is desired, use accessory Mounting Kits on page 77.

#### **OPTIONS**

**230 Volt Input:** All models can be alternately furnished for operation on an input of 210 to 250 VAC, 47-420 Hz. To order, add suffix "–230" to model number and \$10.00 to price. The "–230" option requires two additional days.



### SINGLE OUTPUT, WITH SCREW TERMINALS

(For Mini Encapsulated power supplies with higher wattage outputs than those shown below, see pages 38-39.)

					than	those sh	iown b
Nominal Output Voltage	Output Current Amps.	Regu Load ±%	lation Line ±%	Ripple mV RMS	(\$) Price	Model	Case Size
1	.500	.4	.05	1	90	1EB50	EB-10
1.5	.500	.3	.05	1	90	1.5EB50	EB-10
1.5	1.0	.5	.05	1	120	1.5EB100	EB-13
1.5	2.5	.6	.05	1	161	1.5EB250	EB-20
2	.400	.25	.05	1	90	2EB40	EB-10
3	.500	.25	.05	1	90	3EB50	EB-10
3.3	.500	.15	.05	1	90	3.3EB50	EB-10
3.3 3.3	1.0 2.0	.4 .4	.05 .05	1 1	120 143	3.3EB100 3.3EB200	EB-13 EB-20
4	.400	.15	.05	1	90	4EB40	EB-10
5	.500	.15	.05	1	90	5EB50	EB-10
5	1.0	.25	.05	i	109	5EB100	EB-13
5	1.5	.25	.05	1	126	5EB150	EB-13
5 5	2.0 2.5	.25 .25	.05 .05	1 1	143 161	5EB200 5EB250	EB-20 EB-20
6	.400	.1	.05	1	90	6EB40	EB-10
6	.550	.1	.05		109	6EB55	EB-10
6	1.0	.25	.05	1	126	6EB100	EB-13
6	1.75	.2	.05	1	149	6EB175	EB-20
7	.340	.1	.05	1	90	7EB34	EB-10
7 7	.450 .900	.2 .25	.05 .05	1 1	109 126	7EB45 7EB90	EB-10 EB-13
7	1.15	.2	.05	i	149	7EB115	EB-20
8	.300	.1	.05	1	90	8EB30	EB-10
8	.700	.2	.05	1	126	8EB70	EB-13
8	1.1	.2	.05	1	149	8EB110	EB-20
9 9	.260 .450	.1 .15	.05 .05	1	90 109	9EB26 9EB45	EB-10 EB-10
9	.850	.2	.05	i	126	9EB85	EB-13
9	1.5	.2	.05	1	155	9EB150	EB-20
10	.240	.05	.05	1	90	10EB24	EB-10
10 10	.400 .750	.15 .2	.05 .05	1 1	109 126	10EB40 10EB75	EB-10 EB-13
10	1.2	.15	.05	i	155	10EB120	EB-20
11	.220	.05	.05	1	90	11EB22	EB-10
11	.350	.15	.05	1	109	11EB35	EB-10
11 11	.600 1.0	.15 .15	.05 .05	1 1	126 155	11EB60 11EB100	EB-13 EB-20
12	.200	.05	.05	1	90	12EB20	EB-10
12	.400	.1	.05	1	109	12EB40	EB-10
12	.700	.15	.05	1	132	12EB70	EB-13
12	1.2	.2	.05	1	155	12EB120	EB-20
13 13	.200 .350	.05 .1	.05 .05	1	90 109	13EB20 13EB35	EB-10 EB-10
13	.600	.1	.05	1	132	13EB60	EB-10
13	1.0	.15	.05	1	155	13EB100	EB-20
14	.200	.05	.05	1	90	14EB20	EB-10
14 14	.300 .500	.1 .1	.05 .05	1 1	109 126	14EB30 14EB50	EB-10 EB-13
14	1.0	.1	.05	1	155	14EB50 14EB100	EB-13 EB-20
15	.200	.05	.05	1	90	15EB20	EB-10
15	.400	.1	.05	1	109	15EB40	EB-10
15 15	.600	.1	.05	1	126	15EB60	EB-13
15 16	1.0	.15	.05	1	155	15EB100	EB-20
16 16	.160 .350	.05 .1	.05 .05	1 1	90 115	16EB16 16EB35	EB-10 EB-10
16	.500	.1	.05	1	132	16EB50	EB-13
16	.900	.15	.05	1	155	16EB90	EB-20
17	.140	.05	.05	1	90	17EB14	EB-10
17 17	.325 .450	.1 .1	.05 .05	1	115 132	17EB33 17EB45	EB-10 EB-13
17	.750	.15	.05	i	155	17EB45	EB-20
18	.120	.05	.05	1	90	18EB12	EB-10
18	.270	.1	.05	1	109	18EB27	EB-10
18	.400	.1	.05	1	126	18EB40	EB-13

Nominal	Output	Regu	lation	Ripple			
Output	Current	Load	Line	mV	_(\$)		Case
Voltage	Amps.	±%	±%	RMS	Price	Model	Size
19 19	.120 .250	.05 .1	.05 .05	1 1	90 109	19EB12 19EB25	EB-10 EB-10
19	.400	.1	.05	1 1	126	19EB23	EB-10
19	.700	.1	.05	1	155	19EB70	EB-20
20	.120	.05	.05	1	90	20EB12	EB-10
20 20	.200 .400	.1 .1	.05 .05	1	109 126	20EB20 20EB40	EB-10 EB-13
20	.700	.1	.05	1	155	20EB70	EB-20
21	.120	.05	.05	1	90	21EB12	EB-10
21 21	.175 .375	.1 .1	.05 .05	1	109 126	21EB18 21EB38	EB-10 EB-13
21	.600	.1	.05	1	149	21EB60	EB-20
22	.100	.05	.05	1	90	22EB10	EB-10
22 22	.150 .300	.1 .1	.05 .05	1	109 126	22EB15 22EB30	EB-10 EB-13
22	.500	.1	.05	1	149	22EB50	EB-20
23	.100	.05	.05	1	90	23EB10	EB-10
23 23	.200 .300	.1 .1	.05 .05	1 1	109 126	23EB20 23EB30	EB-10 EB-13
23	.600	.1	.05	1	155	23EB60	EB-20
24	.100	.05	.05	1	90	24EB10	EB-10
24 24	.200 .350	.1 .1	.05 .05	1	109 132	24EB20 24EB35	EB-10 EB-13
24	.600	.1	.05	1	155	24EB60	EB-13
25	.100	.05	.05	1	90	25EB10	EB-10
25	.190	.1	.05	1	109	25EB19	EB-10
25 25	.325 .550	.1 .1	.05 .05	1 1	132 155	25EB33 25EB55	EB-13 EB-20
26	.080	.05	.05	1	90	26EB08	EB-10
26	.170	.1	.05	1	109	26EB17	EB-10
26 26	.300 .450	.1 .1	.05 .05	1	126 149	26EB30 26EB45	EB-13 EB-20
27	.080	.05	.05	1	90	27EB08	EB-10
27	.160	.1	.05	1	109	27EB16	EB-10
27 27	.300 .500	.1 .1	.05 .05	1	126 155	27EB30 27EB50	EB-13 EB-20
28	.080	.05	.05	1	90	28EB08	EB-10
28	.150	.1	.05	1	109	28EB15	EB-10
28 28	.300 .500	.1 .1	.05 .05	1 1	132 155	28EB30 28EB50	EB-13 EB-20
30	.080	.02	.02	1	97	30EB08	EB-13
32	.070	.02	.02	1	97	32EB07	EB-13
34	.060	.02	.02	1	97	34EB06	EB-13
35	.050	.02	.02	1	97	35EB05	EB-13
36	.050	.02	.02	1	97	36EB05	EB-13
38	.040	.02	.02	1	97	38EB04	EB-13
40	.030	.02	.02	1	97	40EB03	EB-13
40	.060	.02	.02	1	120	40EB06	EB-13
42	.030	.02	.02	1	97	42EB03	EB-13
44	.030	.02	.02	1	97	44EB03	EB-13
45	.030	.02	.02	1	97	45EB03	EB-13
48 48	.030 .050	.02 .02	.02 .02	1	97 120	48EB03 48EB05	EB-13 EB-13
50	.030	.02	.02	1	97	50EB03	EB-13
50	.050	.02	.02	i	120	50EB05	EB-13
55	.040	.02	.02	1	120	55EB04	EB-13
60	.050	.02	.02	1	120	60EB05	EB-13
65	.050	.02	.02	1	120	65EB05	EB-13
70	.040	.02	.02	1	120	70EB04	EB-13
75	.030	.02	.02	1	120	75EB03	EB-13
185	.025		julated	2V	63	NX-25B	EB-10
185	.050	Unreg	julated	3.5V	86	NX-50B	EB-13

#### **DUAL TRACKING OUTPUTS -**

							IACI
Nominal	Amps.	Regu	lation	Ripple			
Output Voltages	per Output	Load ±%	Line ±%	mV RMS	(\$) Price	Model	Case Size
±5	.150	.1	.05	1.5	97	DB5-15	EB-10
±5	.250	.1	.05	1.5	120	DB5-25	EB-10
±5	.500	.1	.05	1.5	166	DB5-50	EB-20
±10	.200	.05	.05	1	109	DB10-20	EB-10
±10	.300	.05	.05	1	143	DB10-30	EB-13
±10	.400	.1	.05	1	166	DB10-40	EB-20
±12	.100	.05	.05	1	86	DB12-10	EB-10
±12	.150	.05	.05	1	97	DB12-15	EB-10
±12	.200	.05	.05	1	109	DB12-20	EB-10

Nominal	Amps.	Regu	lation	Ripple			
Output	per	Load	Line	mV	(\$)	Model	Case
Voltages	Output	±%	±%	RMS	Price		Size
±12	.300	.05	.05	1	132	DB12-30	EB-13
±12	.350	.05	.05		143	DB12-35	EB-13
±12 ±12	.500	.05	.05	1	166	DB12-35 DB12-50	EB-13
±15	.100	.05	.05	1	86	DB15-10	EB-10
±15	.150	.05	.05	1	97	DB15-15	EB-10
±15	.200	.05	.05	1	109	DB15-20	EB-10
±15	.300	.05	.05	1	132	DB15-30	EB-13
±15	.350	.05	.05	1	143	DB15-35	EB-13
±15	.500	.1	.05	1	166	DB15-50	EB-20



single output

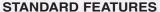
# Mini Encapsulated - PC Board mounting

with screw terminals

SWITCHING REGULATED DC output (accepts either AC or DC input)

- Shipped Within 6 Days
- One Year Warranty

These versatile power supplies mount in a surface area of only 3.5" x 2.5", and are available in a choice of mounting styles. They have a high efficiency and may be operated through a wide temperature range.



- Compact, lightweight, fully encapsulated
- Short circuit and overload protected
- No heat sinking or forced air required
- Input/output isolation
- Extensive EMI filtering and shielding

#### **SPECIFICATIONS**

Input Voltage: 85-130 VAC, 47-420 Hz, single phase, or 120-180 Vdc. DC input may be connected without regard to polarity.

Output Voltage Setting: Output is factory preset to within ±2% (5 to 9 volt models) or ±1% (10 to 48 volt models) of the nominal output voltage.

T/C terminal (Output Voltage Trim Adjustment): The T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or -

Polarity: Output is floating. Either positive or negative terminal may be grounded.

Regulation:

**Load:** ±0.05% (5 and 6 volt "WL" models, ±0.1%)

Line: ±0.05%

Ambient Operating Temperature: -10 to +71°C.

No derating required through +50°C. Storage Temperature: -40 to +85°C.

Temperature Coefficient: ±0.02%/°C (Typical).

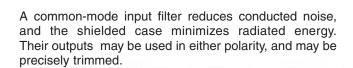
Humidity: Maximum of 90% relative, non-condensing.

Overload/Short Circuit Protection: Power foldback with

automatic recovery.

Isolation:

Input to output: 1400 Vdc Input to ground: 1400 Vdc Output to ground: 400 Vdc



C POWER MODUL

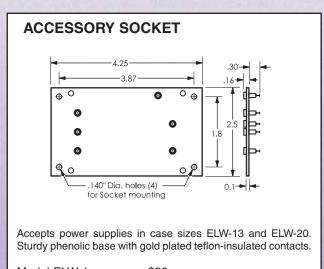
Efficiency: 76% (Typical).

Switching Frequency: 225 kHz (Typical).

Transient Response: Returns to within ±1% of output setting within 300 µS. Maximum of ±3% output excursion following a load step change from 50% to 100% of rating.

Holdup Time: 33 mS (Typical, at nominal input voltage with full load).

Mounting: Models for PC Board mounting may also be mounted in the socket shown below. For models with screw terminals, when wall-mounting or DIN rail mounting is desired, use accessory Mounting Kits on page 77.



Model ELW-1 .....\$20

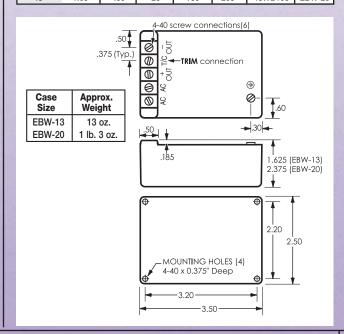
#### FOR PC BOARD MOUNTING

	011		JOAI	10 111	001		
Nominal Output	Output Amp	Current os. at	(@ 25 N	le mV (Hz BW)	(\$)		Case
Voltage	50°C	71°C	RMS	P-P	Price	Model	Size
5	6.00	3.60	10	50	175	5WL600	ELW-13
5	10.00	6.00	10	50	200	5WL1000	ELW-20
6	5.00	3.00	10	50	175	6WL500	ELW-13
6	8.30	4.95	10	50	200	6WL830	ELW-20
7	4.20	2.50	15	100	175	7WL420	ELW-13
7	7.10	4.26	15	100	200	7WL710	ELW-20
8	3.70	2.20	15	100	175	8WL370	ELW-13
8	6.20	3.70	15	100	200	8WL620	ELW-20
9	3.30	2.00	15	100	175	9WL330	ELW-13
	5.50	3.30	15	100	200	9WL550	ELW-20
10	3.00	1.80	15	100	175	10WL300	ELW-13
10	5.00	3.00	15	100	200	10WL500	ELW-20
11	2.70	1.60	15	100	175	11WL270	ELW-13
11	4.50	2.70	15	100	200	11WL450	ELW-20
12	2.50	1.50	15	100	175	12WL250	ELW-13
12	4.10	2.45	15	100	200	12WL410	ELW-20
13	2.30	1.38	15	100	175	13WL230	ELW-13
13	3.80	2.25	15	100	200	13WL380	ELW-20
14	2.10	1.25	15	100	175	14WL210	ELW-13
14	3.50	2.10	15	100	200	14WL350	ELW-20
15	2.00	1.20	15	100	175	15WL200	ELW-13
15	3.30	1.95	15	100	200	15WL330	ELW-20
16	1.85	1.10	15	100	175	16WL185	ELW-13
16	3.10	1.85	15	100	200	16WL310	ELW-20
17	1.75	1.05	15	100	175	17WL175	ELW-13
17	2.90	1.75	15	100	200	17WL290	ELW-20
18	1.65	1.00	15	100	175	18WL165	ELW-13
18	2.75	1.65	15	100	200	18WL275	ELW-20
19	1.55	.93	15	100	175	19WL155	ELW-13
19	2.60	1.55	15	100	200	19WL260	ELW-20
20	1.50	.90	15	100	175	20WL150	ELW-13
20	2.50	1.50	15	100	200	20WL250	ELW-20
21	1.40	.84	15	100	175	21WL140	ELW-13
21	2.35	1.40	15	100	200	21WL235	ELW-20
22	1.35	.80	15	100	175	22WL135	ELW-13
22	2.25	1.35	15	100	200	22WL225	ELW-20
23	1.30	.78	15	100	175	23WL130	ELW-13
23	2.15	1.30	15	100	200	23WL215	ELW-20
24	1.25	.75	15	100	175	24WL125	ELW-13
24	2.10	1.25	15	100	200	24WL210	ELW-20
25	1.20	.72	15	100	175	25WL120	ELW-13
25	2.00	1.20	15	100	200	25WL200	ELW-20
26	1.15	.70	15	100	175	26WL115	ELW-13
26	1.90	1.15	15	100	200	26WL190	ELW-20
27	1.10	.66	15	100	175	27WL110	ELW-13
27	1.85	1.10	15	100	200	27WL185	ELW-20
28	1.05	.63	15	100	175	28WL105	ELW-13
28	1.75	1.05	15	100	200	28WL175	ELW-20
30	1.00	.60	25	150	175	30WL100	ELW-13
30	1.65	1.00	25	150	200	30WL165	ELW-20
36	.85	.50	25	150	175	36WL85	ELW-13
36	1.35	.80	25	150	200	36WL135	ELW-20
40	.75	.45	25	150	175	40WL75	ELW-13
40	1.25	.75	25	150	200	40WL125	ELW-20
45	.65	.40	25	150	175	45WL65	ELW-13
45	1.10	.65	25	150	200	45WL110	ELW-20
48	.65	.40	25	150	175	48WL65	ELW-13
48	1.05	.60	25	150	200	48WL105	ELW-20

#### 1.25 (ELW-13) 2.00 (ELW-20) -.04 Dia.-Case Approx. Size Weight **ELW-13** 11 oz. 2.70 ELW-20 1 lb. 1 oz. -2.30 -- ⊕ 2.50 TRIM connection 1.00 .15 -3.20--3.50 MOUNTING HOLES (4-40 x 0.2") ELW-13 case size: 2 holes ELW-20 case size: 4 holes

#### **WITH SCREW TERMINALS**

Nominal Output	Output	Current os. at		le mV 1Hz BW)	(\$)		Case
Voltage	50°C	71°C	RMS	P-P	Price	Model	Size
5	6.00	3.60	10	50	180	5WB600	EBW-13
5	10.00	6.00	10	50	205	5WB1000	EBW-20
6	5.00	3.00	10	50	180	6WB500	EBW-13
6	8.30	4.95	10	50	205	6WB830	EBW-20
7	4.20	2.50	15	100	180	7WB420	EBW-13
7	7.10	4.26	15	100	205	7WB710	EBW-20
8	3.70	2.20	15	100	180	8WB370	EBW-13
8	6.20	3.70	15	100	205	8WB620	EBW-20
9	3.30 5.50	2.00 3.30	15 15	100 100	180 205	9WB330 9WB550	EBW-13 EBW-20
10	3.00	1.80	15	100	180	10WB300	EBW-13
10	5.00	3.00	15	100	205	10WB500	EBW-20
11	2.70	1.60	15	100	180	11WB270	EBW-13
11	4.50	2.70	15	100	205	11WB450	EBW-20
12	2.50	1.50	15	100	180	12WB250	EBW-13
12	4.10	2.45	15	100	205	12WB410	EBW-20
13	2.30	1.38	15	100	180	13WB230	EBW-13
13	3.80	2.25	15	100	205	13WB380	EBW-20
14	2.10	1.25	15	100	180	14WB210	EBW-13
14	3.50	2.10	15	100	205	14WB350	EBW-20
15	2.00	1.20	15	100	180	15WB200	EBW-13
15	3.30	1.95	15	100	205	15WB330	EBW-20
16	1.85	1.10	15	100	180	16WB185	EBW-13
16	3.10	1.85	15	100	205	16WB310	EBW-20
17	1.75	1.05	15	100	180	17WB175	EBW-13
17	2.90	1.75	15	100	205	17WB290	EBW-20
18	1.65	1.00	15	100	180	18WB165	EBW-13
18	2.75	1.65	15	100	205	18WB275	EBW-20
19	1.55	.93	15	100	180	19WB155	EBW-13
19	2.60	1.55	15	100	205	19WB260	EBW-20
20	1.50	.90	15	100	180	20WB150	EBW-13
20	2.50	1.50	15	100	205	20WB250	EBW-20
21	1.40	.84	15	100	180	21WB140	EBW-13
21	2.35	1.40	15	100	205	21WB235	EBW-20
22	1.35	.80	15	100	180	22WB135	EBW-13
22	2.25	1.35	15	100	205	22WB225	EBW-20
23	1.30	.78	15	100	180	23WB130	EBW-13
23	2.15	1.30	15	100	205	23WB215	EBW-20
24	1.25	.75	15	100	180	24WB125	EBW-13
24	2.10	1.25	15	100	205	24WB210	EBW-20
25	1.20	.72	15	100	180	25WB120	EBW-13
25	2.00	1.20	15	100	205	25WB200	EBW-20
26	1.15	.70	15	100	180	26WB115	EBW-13
26	1.90	1.15	15	100	205	26WB190	EBW-20
27	1.10	.66	15	100	180	27WB110	EBW-13
27	1.85	1.10	15	100	205	27WB185	EBW-20
28	1.05	.63	15	100	180	28WB105	EBW-13
28	1.75	1.05	15	100	205	28WB175	EBW-20
30	1.00	.60	25	150	180	30WB100	EBW-13
30	1.65	1.00	25	150	205	30WB165	EBW-20
36	.85	.50	25	150	180	36WB85	EBW-13
36	1.35	.80	25	150	205	36WB135	EBW-20
40	.75	.45	25	150	180	40WB75	EBW-13
40	1.25	.75	25	150	205	40WB125	EBW-20
45	.65	.40	25	150	180	45WB65	EBW-13
45	1.10	.65	25	150	205	45WB110	EBW-20
48	.65	.40	25	150	180	48WB65	EBW-13
48	1.05	.60	25	150	205	48WB105	EBW-20



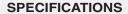


#### **Narrow Profile** SINGLE OUTPUT

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- Five Year Warranty

Where only a narrow mounting space is available, Acopian Narrow Profile power supplies fit where many others cannot. Choose from Series A (High Performance) and Series B (General Purpose) models with output ratings up to 150 volts, up to 3.5 amps.



Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Specifications: See table.

Series A: Model numbers begin with the letter A. Series B: Model numbers begin with the letter B.

Remote Voltage Adjustment/Sensing: Standard in Series A, not available in Series B.

Polarity: Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

#### **Temperature Coefficient:**

Series A: 0.015%/°C (Typical). Series B: 0.02%/°C (Typical).

#### **Ambient Operating Temperature:**

**Series A:** -20 to +71°C. **Series B:** 0 to  $+71^{\circ}$ C.

Storage Temperature: -55 to +85°C.

#### **Overload/Short Circuit Protection:**

Series A: Foldback current limiting with automatic

recovery.

Series B: Input fuse and output current limiting.

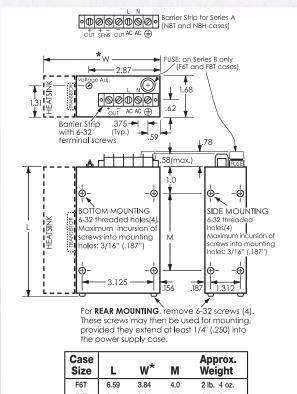
#### **OPTIONS**

Overvoltage Protection: An internal preset overvoltage protector is available. To order, add prefix "V" to the model number and add \$25.00 to the standard price of models with outputs of 1 to 70 volts; \$35.00, for 75 to 150 volt outputs.

Terminal Strip Cover: Clips on. To order, add suffix "M" to model number and \$5.00 to price.

230 Volt Input: All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$25.00 to price. The "-230" option requires two additional days.





8.47 F8T 3.84 3 lb. 2 oz. 5.0 NAT 8 47 3 84 5.0 3 lb. 2 oz. 8.47 4.68 5.0 3 lb. 14 oz.

\*W dimension includes TRANSISTOR on F6T, F8T, and N8T cases and HEATSINK on N8H case.

Mounting: Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **NARROW PROFILE SINGLE OUTPUT**

Nominal	٨٨٠	Ad- Output Current			Regulation Ripple					
Output	just	Ĭ,	Amps. a	ıt	Load	Line	mV	(\$)		Case
Voltage	±۷	40°C	55°C	71°C	± %*	± %*	RMS	Price	Model	Size
1	.5 .5	2.2 3.5	2.1 3.5	2.0 3.0	.005 .005	.005	.250 .250	180 215	A1NT220 A1NT350	N8T N8H
1.5 1.5	.5 .5	2.2 3.5	2.1 3.5	2.0 3.0	.005 .005	.005 .005	.250 .250	180 215	A1.5NT220 A1.5NT350	N8T N8H
2 2	.5 .5	2.2	2.1	2.0 3.0	.005	.005	.250	180 215	A2NT220 A2NT300	N8T N8H
3	.5	1.0	1.0	1.0	.5	.1	.250	150	B3TN100	F6T
3	.5 .5	2.2 3.5	2.1 3.5	2.0 3.0	.005 .005	.005	.250 .250	180 215	A3NT220 A3NT350	N8T N8H
3.3	.5	1.0	1.0	1.0	.5	.1	1	150	B3.3TN100	F6T
3.3 3.3	.5 .5	2.2 3.5	2.1 3.5	2.0 3.0	.005 .005	.005 .005	.250 .250	180 215	A3.3NT220 A3.3NT350	N8T N8H
5 5	.5	1.0 1.1	1.0 1.0	1.0 1.0	.1 .005	.1 .005	1 .250	145 155	B5TN100 A5TN110	F6T N8T
5	.5 .5	2.2	2.1	2.0	.005	.005	.250	180	A51N110 A5NT220	N8T
5	.5	3.5	3.5	3.0	.005	.005	.250	215	A5NT350	N8H
6	.5	1.0 2.2	1.0	1.0	.1 .005	.1	1	150	B6TN100 A6NT220	F6T N8T
6 6	.5 .5	2.2	2.1 2.7	2.0 2.7	.005	.005	.250 .250	180 215	A6NT270	N8H
7	1	1.0	1.0	1.0	.1	.1	1	150	B7TN100	F6T
7 7	.5 .5	1.1 2.0	1.0 2.0	1.0 2.0	.005	.005	.250 .250	170 200	A7TN110 A7NT200	N8T N8H
8	.o 1	1.0	1.0	1.0	.005	.1	.250	150	B8TN100	F6T
8	.5	1.1	1.0	1.0	.005	.005	.250	170	A8TN110	N8T
- 8	.5	2.0	2.0	2.0	.005	.005	.250	200	A8NT200	N8H
9	1	1.0	1.0	1.0	.1	.1	1	150	B9TN100	F6T
9	.5 .5	1.1 2.0	1.0 2.0	1.0 2.0	.005	.005	.250 .250	170 200	A9TN110 A9NT200	N8T N8H
10	1	1.0	1.0	1.0	.1	.1	1	155	B10TN100	F6T
10	.5	1.1	1.0	1.0	.005	.005	.250	170	A10TN110	N8T
10	.5	2.0	2.0	2.0	.005	.005	.250	200	A10NT200	N8H
11 11	1 .5	1.0 1.1	1.0 1.0	.750 1.0	.1 .005	.1 .005	.250	155 170	B11TN100 A11TN110	F6T N8T
11	.5	2.0	2.0	2.0	.005	.005	.250	200	A11NT200	N8H
12	1_	1.0	1.0	.750	.1	.1	1	155	B12TN100	F6T
12 12	.5 .5	1.1 2.0	1.0 2.0	1.0 2.0	.005	.005	.250 .250	170 200	A12TN110 A12NT200	N8T N8H
13	1	1.0	1.0	.750	.1	.1	1	155	B13TN100	F6T
13	.5	1.1	1.0	1.0	.005	.005	.250	170	A13TN110	N8T
13	.5	2.0	2.0	2.0	.005	.005	.250	200	A13NT200	N8H
14 14	1 .5	1.0 1.1	1.0 1.0	.750 1.0	.1 .005	.1 .005	.250	155 170	B14TN100 A14TN110	F6T N8T
14	.5	2.0	2.0	2.0	.005	.005	.250	200	A14NT200	N8H
15	1	1.0	1.0	.750	.1	.1	1	155	B15TN100	F6T
15 15	.5 .5	1.1 2.0	1.0 2.0	1.0 2.0	.005	.005	.250 .250	170 200	A15TN110 A15NT200	N8T N8H
16	1	1.0	1.0	.750	.1	.1	1	155	B16TN100	F6T
16	.5	1.0	1.0	1.0	.005	.005	.250	170	A16TN100	N8T
16	.5	1.75	1.75	1.75	.005	.005	.250	200	A16NT175	N8H
18 18	1 .5	.750 1.0	.750 1.0	.750 1.0	.1 .005	.1 .005	1 .250	155 170	B18TN75 A18TN100	F6T N8T
18	.5	1.5	1.5	1.5	.005	.005	.250	200	A18NT150	N8H
20	1	.500	.500	.500	.1	.1	1	140	B20TN50	F6T
20 20	.5 .5	.900 1.25	.900 1.25	.900 1.25	.005	.005	.250 .250	170 200	A20TN90 A20NT125	N8T N8H
24	.o	.750	.750	.750	.1	.1	.250	155	B24TN75	F6T
24	.5	1.0	1.0	1.0	.005	.005	.250	180	A24TN100	N8T
24	.5	1.25	1.25	1.25	.005	.005	.250	205	A24NT125	N8H
25 25	1 5	.750 .750	.750	.750 .750	.1	.05	1 .250	155 180	B25TN75 A25TN75	F6T N8T
25 25	.5 .5	1.25	.750 1.25	1.25	.005	.005	.250	205	A251N75 A25NT125	N8H
*or 2 mv						THE REAL PROPERTY.	100.00		The second	157531

Nominal	Ad-	Output Current		Regu	lation	Ripple				
Output Voltage	just ±V	40°C	Amps. 55°C	at 71°C	Load ± %	Line	mV RMS	(\$) Price	Model	Case Size
26	1	.750	.750	.750	.1	.05	1	155	B26TN75	F6T
26	.5	1.25	1.25	1.25	.005	.005	.250	205	A26NT125	N8H
28	1	.700	.700	.700	.1	.05	1	155	B28TN70	F6T
28 28	.5 .5	.800 1.25	.800 1.25	.800 1.25	.005	.005	.250 .250	180 205	A28NT80 A28NT125	N8T N8H
30	.5	.500	.500	.500	.005	.005	.250	155	B30TN50	F6T
30	.5	.750	.750	.750	.005	.005	.250	185	A30NT75	N8T
30	.5	1.1	1.1	1.1	.005	.005	.250	215	A30NT110	N8H
32 32	1 .5	.400 .600	.400 .600	.400 .600	.05 .005	.05 .005	1 .250	150 180	B32TN40 A32TN60	F6T N8T
34	1	.400	.400	.400	.05	.05	1	150	B34TN40	F6T
34	.5	1.1	1.1	1.1	.005	.005	.250	215	A34NT110	N8H
35 35	1 .5	.400 .600	.400 .600	.400 .600	.05 .005	.05 .005	.250	150 180	B35TN40 A35TN60	F6T N8T
35	.5	1.1	1.1	1.1	.005	.005	.250	215	A35NT110	N8H
36	1	.400	.400	.400	.05	.05	1	150	B36TN40	F6T
36	.5	.600	.600	.600	.005	.005	.250	180	A36TN60	N8T
36	.5	1.0	1.0	1.0	.005	.005	.250	215	A36NT100	N8H
38	1	.200	.200	.200	.05	.05	1	140	B38TN20	F6T
40 40	.5	.400 .750	.400 .750	.400 .750	.05 .005	.05 .005	.250	160 200	B40TN40 A40NT75	F6T N8T
45 45	1 .5	.400 .600	.400 .600	.400 .600	.05 .005	.05 .005	.250	170 205	B45TN40 A45NT60	F6T N8T
48	1	.400	.400	.400	.005	.005	1	180	B48TN40	F6T
48	.5	.500	.500	.500	.005	.005	.250	215	A48NT50	N8T
50	1	.400	.400	.400	.05	.05	1	190	B50FT40	F6T
50	1	.450	.450	.450	.005	.005	.250	225	A50NT45	N8T
55 55	1	.200 .400	.200 .400	.200 .400	.05 .005	.05 .005	.250	160 225	B55FT20 A55NT40	F6T N8T
60	1	.150	.150	.150	.05	.05	1	160	B60FT15	F6T
60	1	.350	.350	.350	.005	.005	.250	225	A60NT35	N8T
65 65	1	.100 .250	.100 .250	.100 .250	.05 .05	.05 .05	1	155 195	B65FT10 B65FT25	F6T F8T
65	1	.270	.270	.270	.005	.005	.250	225	A65NT27	N8T
67	1	.100	.100	.100	.05	.05	1	155	B67FT10	F6T
70	1	.100	.100	.100	.05	.05	1	155	B70FT10	F6T
70	1	.250	.250	.250	.005	.005	.250	225	A70NT25	N8T
75 75	1	.200 .250	.200 .250	.200 .250	.05 .005	.05 .005	1 .250	190 225	B75FT20 A75NT25	F8T N8T
80	1	.100	.100	.100	.05	.05	1	165	B80FT10	F6T
80	1	.200	.200	.200	.05	.05	1	190	B80FT20	F8T
80	1	.250	.250	.250	.005	.005	.250	225	A80NT25 A85NT25	N8T N8T
90	1	.100	.100	.100	.005	.005	.250	170	B90FT10	F6T
90	1	.200	.200	.200	.05	.05	1	195	B90FT20	F8T
90	1	.250	.250	.250	.005	.005	.250	230	A90NT25	N8T
95 95	1	.200 .200	.200 .200	.200 .200	.05 .005	.05 .005	1 .250	200 225	B95FT20 A95NT20	F8T N8T
100	1	.100	.100	.100	.05	.05	1	190	B100FT10	F6T
100	1	.200	.200	.200	.05	.05	1	205	B100FT20	F8T
100	1	.200	.200	.200	.005	.005	.250	235	A100NT20	N8T
110	1	.100	.100	.100	.05	.05	1	190 190	B110FT10 B115FT10	F6T F6T
120	1	.050	.050	.050	.05	.05	1	185	B120FT05	F6T
120	1	.200	.200	.200	.05	.05	1	215	B120FT20	F8T
120	1	.200	.200	.200	.005	.005	.250	235	A120NT20	N8T
125	1	.050	.050	.050	.05	.05	1	185	B125FT05	F6T
125 125	1	.200 .200	.200 .200	.200 .200	.05 .005	.05 .005	.250	215 235	B125FT20 A125NT20	F8T N8T
150	1	.100	.100	.100	.05	.05	1	205	B150FT10	F8T
150	1	.100	.100	.100	.005	.005	.250	235	A150NT10	N8T

<sup>\*</sup>or 2 mv, whichever is greater



#### **Narrow Profile**

**SWITCHING REGULATED (to 120 watts)** 

AC-DC single output

DC-DC (DC input can be used on 230 VAC input models)

- Shipped Within 3 Days
- Five Year Warranty



This newest group of Narrow Profile switchers includes convection cooled models less than 7" long that

#### STANDARD FEATURES

- · Internal EMI Filter and Shielding
- Pluggable Input/output Terminal Block
- Excellent Load/line Regulation
- Overcurrent, Overvoltage Protection
- · No Minimum Load Required

#### **SPECIFICATIONS**

**Input Voltage:** 90-132 VAC, 47-420 Hz, single phase. 180-265 VAC input is also available (see Options).

**DC Input:** Not applicable on 115 VAC models. On 230 VAC models, 200-375 Vdc input can be used. DC input may be connected without regard to polarity.

Inrush current: Cold start, (thermistor limiter) 15A peak

@115 VAC; 30A peak @ 230 VAC.

Startup Time: 1 second typical.

**Input Undervoltage:** An input of less than 90 VAC (180 VAC with "-230" option) will not damage power supply.

Regulation:

Line: ±0.05% Load: ±0.05%

**Output Voltage Remote Adjustment:** The output voltage may be controlled by means of an external 1K potentiometer.

**Polarity:** Output is floating and may be used in either polarity.

Drift: ±0.1% typical over 8 hours, after 30 minute warmup.

Temperature Coefficient: ±0.02%/°C (Typical).

Holdup Time: 20 mS minimum.

Transient Response: 300  $\mu$ S to return to  $\pm 1\%$  of output setting. Maximum of  $\pm 3\%$  output excursion following a load step change from 50% to 100%.

**Remote Sensing:** Compensates up to 0.5 volt drop per output line, within the limits of the output voltage adjustment range.

provide outputs up to 75 watts and fan cooled models less than 8" long that provide outputs to 120 watts.

**Overload/Short Circuit Protection:** Current limiting with automatic recovery.

**Overvoltage Protection:** Latches power supply OFF, reset by momentarily removing AC input power.

**EMI:** Designed to meet FCC Part 15 and EN55022, Class A.

Output Indicator (DC on): Green LED.

**Efficiency:** See table. (Typical, at nominal input voltage, with full load.)

Ambient Operating Temperature: 0 to +71°C.

Storage Temperature: -40 to +85°C.

**Cooling:** Case size WN6A: forced-air cooled; air enters rear of power supply and exits from top.

Case size WN6B: convection cooled.

Switching Frequency: 100 kHz (Typical).

Dielectric Withstand VoltageIsolationInput to output:4242 Vdc500 VACInput to case:2121 Vdc500 VACOutput to case:750 Vdc300 VAC

Internal Failure Protection: Provided by internal fuse.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

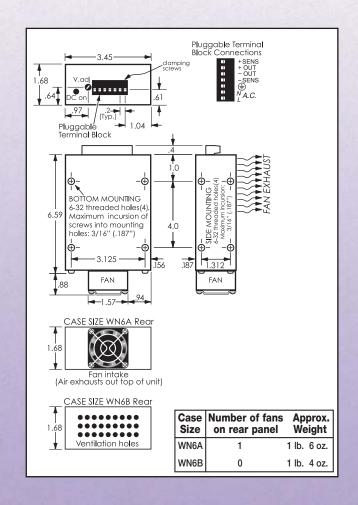
**230 Volt Input:** For applications where operation on an input of 180-265 VAC, 47-420 Hz, is desired. To order, add suffix "-230" to the model number. No increase in price.

On 230 VAC models, 200-375 Vdc input can also be used.

#### Narrow Profile SWITCHING REGULATED (to 120 watts)

Nominal Output	Adjust Range		Current s. at	Ripp (@ 25 N	le mV /IHz BW)	Effic. (Typ.)	(\$)		Case
Voltage	±Ϋ	40°C	71°C	RMS	P-P	%	Price	Model	Size
3.3	.5	12	8.4	10	50	66	185	W3.3FT1200	WN6B
3.3	.5	15	10.5	10	50	66	225	W3.3FT1500	WN6A
5	.5	12	8.4	10	50	70	185	W5FT1200	WN6B
5	.5	15	10.5	10	50	70	225	W5FT1500	WN6A
6	.5	10	7	10	50	71	185	W6FT1000	WN6B
6	.5	12.5	8.6	10	50	71	225	W6FT1250	WN6A
7	.5	8.5	5.9	10	50	71	185	W7FT850	WN6B
7	.5	10.6	7.4	10	50	71	225	W7FT1060	WN6A
8	.5	7.5	5.2	15	100	72	185	W8FT750	WN6B
8	.5	9.4	6.6	15	100	72	225	W8FT940	WN6A
9	.5	6.6	4.6	15	100	73	185	W9FT660	WN6B
9	.5	9.3	6.5	15	100	73	225	W9FT930	WN6A
10	.5	6	4.2	15	100	73	185	W10FT600	WN6B
10	.5	9.2	6.4	15	100	73	225	W10FT920	WN6A
12	.5	5.8	4.0	15	100	76	185	W12FT580	WN6B
12	.5	9.1	6.3	15	100	76	225	W12FT910	WN6A
13	.5	5.3	3.7	15	100	76	185	W13FT530	WN6B
13	.5	8.1	5.6	15	100	76	225	W13FT810	WN6A
14	.5	4.9	3.4	15	100	76	185	W14FT490	WN6B
14	.5	7.7	5.4	15	100	76	225	W14FT770	WN6A
15	.5	4.7	3.3	15	100	76	185	W15FT470	WN6B
15	.5	7.4	5.2	15	100	76	225	W15FT740	WN6A
16	.5	4.4	3	15	100	76	185	W16FT440	WN6B
16	.5	6.8	4.7	15	100	76	225	W16FT680	WN6A
18	.5	4	2.8	15	100	78	185	W18FT400	WN6B
18	.5	6	4.2	15	100	78	225	W18FT600	WN6A
20	.5	3.7	2.6	15	100	78	185	W20FT370	WN6B
20	.5	5.6	3.9	15	100	78	225	W20FT560	WN6A

Voltage         ± V         40°C         71°C         RMS         P-P         %         Price         Model         Si           22         .5         3.4         2.4         15         100         79         185         W22FT340         W           24         .5         5.3         3.7         15         100         81         185         W22FT320         W           24         .5         5         3.5         15         100         80         225         W24FT320         W           24         .5         5         3.5         15         100         81         185         W24FT320         W           25         .5         3         2.1         15         100         80         225         W25FT300         W           25         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         81         185         W28FT270         W	_						,				
Voltage         ± V         40°C         71°C         RMS         P-P         %         Price         Model         Si           22         .5         3.4         2.4         15         100         79         185         W22FT340         W           24         .5         5.3         3.7         15         100         81         185         W24FT320         W           24         .5         5         3.5         15         100         80         225         W24FT500         W           25         .5         3         2.1         15         100         81         185         W25FT300         W           25         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         81         185         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         81         185         W28FT270         W									(\$)		Case
22         .5         5.3         3.7         15         100         79         225         W22FT530         W           24         .5         3.2         2.2         15         100         81         185         W24FT320         W           24         .5         5         3.5         15         100         80         225         W24FT500         W           25         .5         3         2.1         15         100         81         185         W25FT300         W           26         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         80         225         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         80         225         W28FT270         W <th></th> <th>Voltage</th> <th>±Ϋ́</th> <th>40°C</th> <th>71°C</th> <th>RMS</th> <th>P-P</th> <th></th> <th>Price</th> <th>Model</th> <th>Size</th>		Voltage	±Ϋ́	40°C	71°C	RMS	P-P		Price	Model	Size
24         .5         3.2         2.2         15         100         81         185         W24FT320         W           24         .5         5         3.5         15         100         80         225         W24FT500         W           25         .5         3         2.1         15         100         81         185         W25FT300         W           26         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         81         185         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         80         225         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W <td></td> <td>22</td> <td>.5</td> <td>3.4</td> <td>2.4</td> <td>15</td> <td>100</td> <td>79</td> <td>185</td> <td>W22FT340</td> <td>WN6B</td>		22	.5	3.4	2.4	15	100	79	185	W22FT340	WN6B
24         .5         5         3.5         15         100         80         225         W24FT500         W           25         .5         3         2.1         15         100         81         185         W25FT300         W           25         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         81         185         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         80         225         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         81         185         W32FT300         W		22	.5	5.3	3.7	15	100	79	225	W22FT530	WN6A
25		24	.5	3.2	2.2	15	100	81	185	W24FT320	WN6B
25         .5         4.8         3.3         15         100         80         225         W25FT480         W           26         .5         2.8         2         15         100         81         185         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         81         185         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           34         1         2.2         1.5         25         150         81         185         W32FT330         W <td></td> <td>24</td> <td>.5</td> <td>5</td> <td>3.5</td> <td>15</td> <td>100</td> <td>80</td> <td>225</td> <td>W24FT500</td> <td>WN6A</td>		24	.5	5	3.5	15	100	80	225	W24FT500	WN6A
26         .5         2.8         2         15         100         81         185         W26FT280         W           26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         81         185         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W		25	.5	3	2.1	15	100	81	185	W25FT300	WN6B
26         .5         4.6         3.2         15         100         80         225         W26FT460         W           28         .5         2.7         1.9         15         100         81         185         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         81         185         W30FT250         W           32         1         2.3         1.6         25         150         80         225         W30FT400         W           32         1         3.7         2.5         25         150         81         185         W32FT230         W           34         1         2.2         1.5         25         150         80         225         W32FT370         W           34         1         3.5         2.4         25         150         81         185         W34FT220         W <td></td> <td>25</td> <td>.5</td> <td>4.8</td> <td>3.3</td> <td>15</td> <td>100</td> <td>80</td> <td>225</td> <td>W25FT480</td> <td>WN6A</td>		25	.5	4.8	3.3	15	100	80	225	W25FT480	WN6A
28         .5         2.7         1.9         15         100         81         185         W28FT270         W           28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W		26	.5	2.8	2	15	100	81	185	W26FT280	WN6B
28         .5         4.2         2.9         15         100         80         225         W28FT420         W           30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           38         1         2         1.4         25         150         81         185         W38FT200         W		26	.5	4.6	3.2	15	100	80	225	W26FT460	WN6A
30         .5         2.5         1.7         25         150         81         185         W30FT250         W           30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W		28	.5	2.7	1.9	15	100	81	185	W28FT270	WN6B
30         .5         4         2.8         25         150         80         225         W30FT400         W           32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W		28	.5	4.2	2.9	15	100	80	225	W28FT420	WN6A
32         1         2.3         1.6         25         150         81         185         W32FT230         W           32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W		30	.5	2.5	1.7	25	150	81	185	W30FT250	WN6B
32         1         3.7         2.5         25         150         80         225         W32FT370         W           34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W      <		30	.5	4	2.8	25	150	80	225	W30FT400	WN6A
34         1         2.2         1.5         25         150         81         185         W34FT220         W           34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           40         1         1.9         1.3         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W      <		32	1	2.3	1.6	25	150	81	185	W32FT230	WN6B
34         1         3.5         2.4         25         150         80         225         W34FT350         W           36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W      <		32	1	3.7	2.5	25	150	80	225	W32FT370	WN6A
36         1         2.1         1.4         25         150         81         185         W36FT210         W           36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W      <		34	1	2.2	1.5	25	150	81	185	W34FT220	WN6B
36         1         3.3         2.3         25         150         80         225         W36FT330         W           38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         82         185         W45FT260         W      <		34	1	3.5	2.4	25	150	80	225	W34FT350	WN6A
38         1         2         1.4         25         150         81         185         W38FT200         W           38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         81         225         W45FT260         W           48         1         1.6         1.1         25         150         82         185         W48FT160         W <td></td> <td>36</td> <td>1</td> <td>2.1</td> <td>1.4</td> <td>25</td> <td>150</td> <td>81</td> <td>185</td> <td>W36FT210</td> <td>WN6B</td>		36	1	2.1	1.4	25	150	81	185	W36FT210	WN6B
38         1         3.1         2.2         25         150         80         225         W38FT310         W           40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         81         225         W45FT260         W           48         1         1.6         1.1         25         150         82         185         W48FT160         W		36	1	3.3	2.3	25	150	80	225	W36FT330	WN6A
40         1         1.9         1.3         25         150         82         185         W40FT190         W           40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         81         225         W45FT260         W           48         1         1.6         1.1         25         150         82         185         W48FT160         W		38	1	2	1.4	25	150	81	185	W38FT200	WN6B
40         1         3         2.1         25         150         81         225         W40FT300         W           42         1         1.8         1.2         25         150         82         185         W42FT180         W           42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         81         225         W45FT260         W           48         1         1.6         1.1         25         150         82         185         W48FT160         W		38	1	3.1	2.2	25	150	80	225	W38FT310	WN6A
42     1     1.8     1.2     25     150     82     185     W42FT180     W       42     1     2.8     1.9     25     150     81     225     W42FT280     W       45     1     1.7     1.2     25     150     82     185     W45FT170     W       45     1     2.6     1.8     25     150     81     225     W45FT260     W       48     1     1.6     1.1     25     150     82     185     W48FT160     W		40	1	1.9	1.3	25	150	82	185	W40FT190	WN6B
42         1         2.8         1.9         25         150         81         225         W42FT280         W           45         1         1.7         1.2         25         150         82         185         W45FT170         W           45         1         2.6         1.8         25         150         81         225         W45FT260         W           48         1         1.6         1.1         25         150         82         185         W48FT160         W		40	1	3	2.1	25	150	81	225	W40FT300	WN6A
45 1 1.7 1.2 25 150 82 185 W45FT170 W 45 1 2.6 1.8 25 150 81 225 W45FT260 W 48 1 1.6 1.1 25 150 82 185 W48FT160 W		42	1	1.8	1.2	25	150	82	185	W42FT180	WN6B
45 1 2.6 1.8 25 150 81 225 W45FT260 W 48 1 1.6 1.1 25 150 82 185 W48FT160 W		42	1	2.8	1.9	25	150	81	225	W42FT280	WN6A
48 1 1.6 1.1 25 150 82 185 W48FT160 W		45	1	1.7	1.2	25	150	82	185	W45FT170	WN6B
		45	1	2.6	1.8	25	150	81	225	W45FT260	WN6A
48 1 2.5 1.7 25 150 81 225 W48FT250 W		48	1	1.6	1.1	25	150	82	185	W48FT160	WN6B
		48	1	2.5	1.7	25	150	81	225	W48FT250	WN6A





#### **Narrow Profile**

### **SWITCHING REGULATED (to 288 watts)** (Power Factor Correction and Universal Input)

DC output (accepts either AC or DC input)

- Shipped Within 3 Days
- U.L. Recognized (3.3v to 48v models)
- **EW!!** UL508 Listed units available
  - **(€** (3.3v to 48v models)
  - Five Year Warranty



now available

Small yet providing up to 288 watts of well regulated DC, these supplies can be mounted in spaces where many others won't fit. A metal case fully encloses all

#### STANDARD FEATURES

- Universal input
- Power Factor Correction
- High surge current capability
- · 'Soft start' operation

#### **SPECIFICATIONS**

Input Voltage: 90-265 VAC, 49-420 Hz, single phase, or 110-350 Vdc. DC input may be connected without regard to polarity.

Inrush current: Cold start, (thermistor limiter) 20A peak @115 VAC; 40A peak @ 230 VAC.

Startup Time: 800 mS typical.

Input Undervoltage: An input of less than 90 VAC will

not damage power supply.

Power Factor: 0.99 typical at 115 VAC, 60Hz and full load.

Complies with EN61000-3-2.

Regulation:

Line: ±0.05% Load: ±0.05%

Output Voltage Remote Adjustment: The output voltage may be controlled by means of an external 1K potentiometer.

Polarity: Output is floating and may be used in either polarity.

Drift: ±0.1% typical over 8 hours, after 30 minute warmup.

Temperature Coefficient: ±0.02%/°C (Typical).

Holdup Time: 16 mS minimum.

Transient Response: 300 µS to return to ±1% of output setting. Maximum of ±3% output excursion following a load step change from 50% to 100%.

Remote Sensing: Compensates up to 0.5 volt drop per output line, within the limits of the output voltage adjustment range.

circuitry and provides EMI shielding and an AC input filter attenuates both common and differential mode noise conducted to the line.

Overload/Short Circuit Protection: Current limiting with automatic recovery.

Overvoltage Protection: Latches power supply OFF, reset by momentarily removing AC input power.

Output Inhibit: Applying between +3 and +25 Vdc to the inhibit terminal will disable the supply.

EMI: Complies with FCC Part 15 and EN55022, Class A.

Output Indicator (DC on): Green LED.

Thermal Protection: Thermostat, self-resetting.

Efficiency: See table. (Typical, at nominal input voltage,

with full load.)

Ambient Operating Temperature: 0 to +71°C.

Storage Temperature: -40 to +85°C.

Cooling: Forced-air cooled; air enters rear of power

supply and exits from top.

Switching Frequency: 100 kHz (Typical).

**Dielectric Withstand Voltage** Isolation Input to output: 4242 Vdc 500 VAC Input to case: 2121 Vdc 500 VAC Output to case: 750 Vdc 300 VAC

Internal Failure Protection: provided by internal fuse.

Mounting: Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

# NEW! OPTIONS

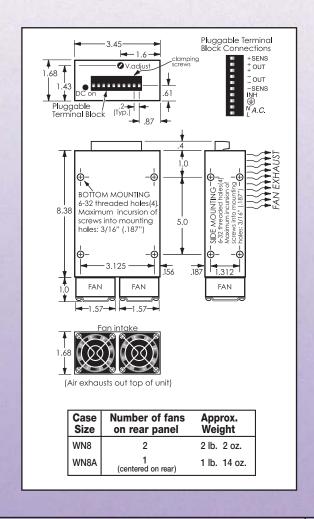
UL508 Listed (3.3v to 48v models): These power supplies have been tested for compliance with the electrical requirements of UL508, and can be marked in compliance to UL508 at no additional cost. To order, add suffix "U" to model number.

#### Narrow Profile SWITCHING REGULATED (to 288 watts)

Nominal Output Voltage 3.3 3.3	Adjust Range ± V		Current s. at		le mV	Effic.			
3.3 3.3		40°C		(@ 23 N	/Hz BW)	(Typ.)	.) (\$)		Case
3.3	.5	70 0	71°C	RMS	P-P	%	Price	Model	Size
	_	18.5	12.9	10	50	66	275	W3.3NT1850	WN8A
5	.5	25	17.5	10	50	66	350	W3.3NT2500	WN8
5	.5 .5	18.5 25	12.9 17.5	10 10	50 50	69 69	275 350	W5NT1850 W5NT2500	WN8A WN8
6	.5	15.4	10.7	10	50	70	275	W6NT1540	WN8A
6	.5	24	16.8	10	50	70	350	W6NT2400	WN8
7	.5	15	10.5	10	50	70	275	W7NT1500	WN8A
7	.5	23	16.1	10	50	70	350	W7NT2300	WN8
8	.5	14.7	10.3	15	100	72	275	W8NT1470	WN8A
8	.5	23	16.1	15	100	72	350	W8NT2300	WN8
9	.5	14.4	10	15	100	72	275	W9NT1440	WN8A
9	.5	23	16.1	15	100	72	350	W9NT2300	WN8
10	.5	14.1	9.8	15	100	73	275	W10NT1410	WN8A
10	.5	22	15.4	15	100	73	350	W10NT2200	WN8
12	.5	13.7	9.6	15	100	75	275	W12NT1370	WN8A
12	.5	22	15.4	15	100	75	350	W12NT2200	WN8
13	.5	12.3	8.6	15	100	75	275	W13NT1230	WN8A
13	.5	20	14	15	100	75	350	W13NT2000	WN8
14	.5	11.7	8.2	15	100	75	275	W14NT1170	WN8A
14	.5	19	13.3	15	100	75	350	W14NT1900	WN8
15	.5	11.1	7.8	15	100	75	275	W15NT1110	WN8A
15	.5	18	12.6	15	100	75	350	W15NT1800	WN8
16	.5	10.2	7.1	15	100	75	275	W16NT1020	WN8A
16	.5	16.5	11.5	15	100	75	350	W16NT1650	WN8
18	.5	9.2	6.4	15	100	77	275	W18NT920	WN8A
18 20	.5 .5	15 8.6	10.5 6	15 15	100	77 78	350 275	W18NT1500 W20NT860	WN8 WN8A
20	.5 .5	14	9.8	15	100	78	350	W20NT000 W20NT1400	WN8
22	.5	8	5.6	15	100	78	275	W20NT1400 W22NT800	WN8A
22	.5	13	9.1	15	100	78	350	W22NT1300	WN8
24	.5	7.5	5.3	15	100	80	275	W24NT750	WN8A
24	.5	12	8.4	15	100	80	350	W24NT1200	WN8
25	.5	7.2	5	15	100	80	275	W25NT720	WN8A
25	.5	11.2	7.8	15	100	80	350	W25NT1120	WN8
26	.5	6.9	4.8	15	100	80	275	W26NT690	WN8A
26	.5	10.6	7.4	15	100	80	350	W26NT1060	WN8
28	.5	6.2	4.3	15	100	80	275	W28NT620	WN8A
28	.5	10	7	15	100	80	350	W28NT1000	WN8
30	.5	5.6	3.9	25	150	80	275	W30NT560	WN8A
30	.5	9	6.3	25	150	80	350	W30NT900	WN8
32	1	5.4	3.7	25	150	80	275	W32NT540	WN8A
32	1	8.6	6	25	150	80	350	W32NT860	WN8
34	1	5.2	3.6	25	150	80	275	W34NT520	WN8A
34	1	8.3	5.8	25	150	80	350	W34NT830	WN8
36	1	5	3.5	25	150	80	275	W36NT500	WN8A
36	1	8 4.7	5.6 3.3	25 25	150 150	80 80	350 275	W36NT800 W38NT470	WN8 WN8A
38	1	7.5	5.2	25	150	80	350	W38NT750	WN8
40	1	4.3	3	25	150	81	275	W40NT430	WN8A
40	1	7	4.9	25	150	81	350	W40NT700	WN8
42	1	4.1	2.8	25	150	81	275	W40NT/100 W42NT410	WN8A
42	1	6.8	4.7	25	150	81	350	W42NT680	WN8
45	1	3.9	2.7	25	150	81	275	W45NT390	WN8A
45	1	6.4	4.4	25	150	81	350	W45NT640	WN8
48	1	3.7	2.6	25	150	81	275	W48NT370	WN8A
48	1	6	4.2	25	150	81	350	W48NT600	WN8

Nominal Output	Adjust Range		Current s. at		le mV /IHz BW)	Effic. (Typ.)	(\$)		Case
Voltage	±V	40°C	71°C	RMS	P-P	%	Price	Model	Size
50*	1	3.3	2.3	50	150	80	275	W50NT330	WN8A
50*	1	5	3.5	50	150	80	350	W50NT500	WN8
55*	1	3	2.1	50	150	80	275	W55NT300	WN8A
55*	1	4.5	3.2	50	150	80	350	W55NT450	WN8
60*	1	2.8	1.9	50	150	80	275	W60NT280	WN8A
60*	1	4.2	2.9	50	150	80	350	W60NT420	WN8
70*	1	2.4	1.7	67	200	80	275	W70NT240	WN8A
70*	1	3.6	2.5	67	200	80	350	W70NT360	WN8
75*	1	2.2	1.5	67	200	80	275	W75NT220	WN8A
75*	1	3.3	2.3	67	200	80	350	W75NT330	WN8
80*	1	2.1	1.4	67	200	80	275	W80NT210	WN8A
80*	1	3.1	2.2	67	200	80	350	W80NT310	WN8
90*	1	1.8	1.3	100	300	80	275	W90NT180	WN8A
90*	1	2.8	1.9	100	300	80	350	W90NT280	WN8
100*	1	1.7	1.2	150	450	80	275	W100NT170	WN8A
100*	1	2.5	1.8	150	450	80	350	W100NT250	WN8
110*	1	1.5	1.1	150	450	80	275	W110NT150	WN8A
110*	1	2.3	1.6	150	450	80	350	W110NT230	WN8
120*	1	1.4	1	150	450	80	275	W120NT140	WN8A
120*	1	2.1	1.5	150	450	80	350	W120NT210	WN8
125*	1	1.3	0.9	150	450	80	275	W125NT130	WN8A
125*	1	2	1.4	150	450	80	350	W125NT200	WN8

<sup>\*</sup>Not CE or U.L. recognized when this catalog was published.



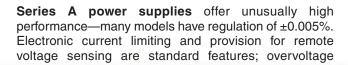


# Gold Box SINGLE OUTPUT

LINEAR REGULATED AC-DC

**SERIES A** (High Performance)

- Shipped Within 3 Days
- All Models U.L. Recognized
- · ( €
- Five Year Warranty



protection is available as a built-in option. Rugged extruded aluminum cases include threaded mounting holes on bottom, back, and side, permitting mounting in any position.



#### **SERIES A: HIGH PERFORMANCE POWER SUPPLIES**

#### STANDARD FEATURES

- Provision for remote sensing and/or external output adjustment
- Short circuit proof with automatic recovery (electronic current limiting)
- Can be mounted on any of three surfaces (case sizes H8, H11 and H16; two surfaces)

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

**Output Specifications:** See pages 48 and 49. Series A supplies have model numbers beginning with the letter A.

Remote Voltage Adjustment/Sensing: Provision for sensing the output voltage across the load, so that drops in the load line are compensated, is a standard feature. This feature also permits the use of an externally located potentiometer to adjust output voltage.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

**Temperature Coefficient:** 0.015%/°C (Typical). **Ambient Operating Temperature:** -20 to +71°C.

Storage Temperature: -55 to +85°C.

Response Time: Less than 20 microseconds.

#### **OPTIONS**

**Under/Overvoltage Alarm Contacts:** To control a horn or light, or to signal your PLC. Available on models with nominal outputs of 5 Vdc to 125 Vdc. SPDT contacts switch if the power supply's output deviates by

1.0 volt or more: 5 volt models.

2.0 volts or more: 6 to 48 volt models.

3.0 volts or more: 50 to 125 volt models.

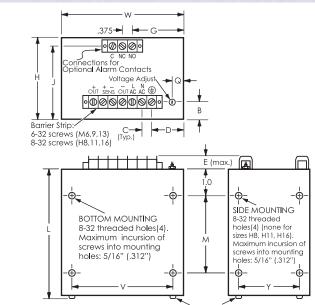
Contact ratings: 120 VAC, 8A / 60 Vdc, 1A. (To comply with SELV requirements, limit switched voltage to 60Vdc/42 VAC.) To order, add suffix "L" to model number and \$35.00 to price. Models with this option are not yet UL Recognized/CE certified.

**Overvoltage Protection:** An internal preset overvoltage protector is available. To order, add prefix "V" to the model number, and increase standard price as follows:

 **Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "–230" to model number and \$25.00 to price. (For models in case sizes H8, H11 and H16, add \$40.00.) The "–230" option requires two additional days.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.



For **REAR MOUNTING**, remove original screws(4) and use 8-32 Type F self-tapping screws. They should extend at least 5/16" (0.312") into the power supply case.

Case Size		w	Н	М	٧	Υ	Q	В	Е	С	D	G	J	Approx. Weight
M6	6.59	5.12	3.44	4.0	4.5	3.0	.5	.75	.58	.375	1.44	2.19	3.09	4 lb. 4 oz.
M9	9.25	5.12	3.44	6.0	4.5	3.0	.5	.75	.58	.375	1.44	2.19	3.09	7 lb. 4 oz.
M13	13.25	5.12	3.44	10.0	4.5	3.0	.5	.75	.58	.375	1.44	2.19	3.09	11 lb.
H8	8.75	7.37	5.12	6.0	6.75	4.56	1.12	1.25	.78	.562	2.25	3.57	4.72	15 lb. 8 oz.
H11	11.25	7.37	5.12	8.0	6.75	4.56	1.12	1.25	.78	.562	2.25	3.57	4.72	18 lb. 4 oz.
H16	16.00	7.37	5.12	11.0	6.75	4.56	1.12	1.25	.78	.562	2.25	3.57	4.72	26 lb.



# Gold Box SINGLE OUTPUT

LINEAR REGULATED AC-DC

**SERIES B** (General Purpose)

- Shipped Within 3 Days
- All Models U.L. Recognized
- · ( €
- Five Year Warranty

Series B power supplies are ideal for powering digital circuitry, test sets, instrument bridges, and process control transmitters. Many models have regulation of  $\pm 0.1\%$  or better. All components are generously derated

to insure a long and trouble-free life, and they use the same rugged construction as the Series A line. Overvoltage protection and other options are available.

#### **SERIES B: GENERAL PURPOSE POWER SUPPLIES**

#### STANDARD FEATURES

- Short circuit proof (electronic current limiting)
- · May be mounted on any of three surfaces
- · Completely serviceable

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

**Output Specifications:** See pages 48 and 49. Series B supplies have model numbers beginning with the letter B.

Remote Voltage Adjustment/Sensing: Available as an option. See below.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** 0 to +71°C.

Storage Temperature: -55 to +85°C.

#### **OPTIONS**

**Under/Overvoltage Alarm Contacts:** To control a horn or light, or to signal your PLC. Available on models with nominal outputs of 5 Vdc to 125 Vdc. SPDT contacts switch if the power supply's output deviates by

- 1.0 volt or more: 5 volt models.
- 2.0 volts or more: 6 to 48 volt models.
- 3.0 volts or more: 50 to 125 volt models.

Contact ratings: 120 VAC, 8A / 60 Vdc, 1A. (To comply with SELV requirements, limit switched voltage to 60Vdc/42 VAC.) To order, add suffix "L" to model number and \$35.00 to price. Models with this option are not yet UL Recognized/CE certified.

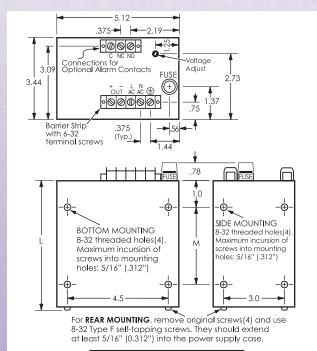
**Overvoltage Protection:** An internal preset overvoltage protector is available. To order, add prefix "V" to the model number, and add \$25.00 to the standard price of models with outputs of 1.5 to 70 volts; \$35.00, for 75 to 200 volt outputs.

Remote Voltage Sensing: Provision for sensing the output voltage across the load, so that drops in the load lines are compensated, is available on all models. (This option also permits the use of an externally located potentiometer to adjust output voltage.) To order, add prefix "R" to the model number. No increase in price.

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$25.00 to price. The "-230" option requires two additional days.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.



Case Size	L	M	Approx. Weight
G3	3.71	1.62	3 lb. 2 oz.
G5	5.09	3.0	4 lb. 14 oz.
G6	6.59	4.0	5 lb. 8 oz.
G9	9.25	6.0	7 lb. 4 oz.
G13	13.25	10.0	11 lb.

#### **SERIES A & B**

Nominal	Ad-	Out	put Curi		Regu	lation	Ripple			
Output Voltage	just ±V	40°C	Amps.	at 71°C	Load ± %*	Line ± %*	mV RMS	(\$) Price	Model	Case Size
1.5	.5	6.0	4.3	3.5	.005	.005	.250	\$245	A1.5MT600	M6
1.5	.5	9.0	7.2	5.5	.005	.005	.250	\$280	A1.5MT900	M9
1.5 1.5	.5 .5	12.0 22.0	10.0 18.5	8.0 15.5	.005 .005	.005	.250 .250	\$335 \$415	A1.5MT1200 A1.5H2200	M13 H11
1.5	.5	32.0	27.0	22.5	.005	.005	.250	\$495	A1.5H3200	H16
2	.5	6.0	4.3	3.5	.005	.005	.250	\$245	A2MT600	M6
2	.5	12.0	10.0	8.0	.005	.005	.250	\$335	A2MT1200	M13
3	.5	.500	.500	.500	.2	.1	1	\$115	B3G50	G3
3	.5 .5	1.2 2.1	1.1 2.1	1.0 2.0	.2 .5	.1 .1	1	\$140 \$160	B3G120 B3G210	G3 G5
3	.5	4.0	3.5	3.0	.5	.1	1.5	\$200	B3G400	G6
3	.5	6.0	4.3	3.5	.005	.005	.250	\$245	A3MT600	M6
3	.5 .5	9.0 12.0	7.2 10.0	5.5 8.0	.005 .005	.005 .005	.250 .250	\$280 \$335	A3MT900 A3MT1200	M9 M13
3	.5	17.0	14.5	12.0	.005	.005	.250	\$370	A3H1700	H8
3	.5	20.0	16.5	13.5	.005	.005	.250	\$415	A3H2000	H11
3	.5	30.0	25.0	20.0	.005	.005	.250	\$495	A3H3000	H16
3.3 3.3	.5 .5	.500 1.2	.500 1.1	.500 1.0	.2 .2	.1 .1	1	\$115 \$140	B3.3G50 B3.3G120	G3 G3
3.3	.5	2.1	2.1	2.0	.5	.1	l i	\$160	B3.3G210	G5
3.3	.5	4.0	3.5	3.0	.5	.1	1.5	\$200	B3.3G400	G6
3.3	.5	6.0	4.3	3.5	.005	.005	.250	\$245	A3.3MT600	M6
3.3 3.3	.5 .5	7.0 9.0	5.9 7.2	4.9 5.5	.5 .005	.1 .005	1.5 .250	\$250 \$285	B3.3G700 A3.3MT900	G9 M9
3.3	.5	12.0	10.0	8.0	.005	.005	.250	\$335	A3.3MT1200	M13
3.3	.5	17.0	14.5	12.0	.005	.005	.250	\$370	A3.3H1700	Н8
3.3	.5	22.0	18.5	15.5	.005	.005	.250	\$415	A3.3H2200	H11
3.3 5	.5 .5	32.0	27.0	22.5	.005	.005	.250 1	\$495 \$115	A3.3H3200 B5G50	H16
5 5	.5 .5	.500 1.2	.500 1.1	.500 1.0	.1 .1	.1 .1		\$140	B5G120	G3 G3
5	.5	1.7	1.5	1.3	.2	.1	1.5	\$150	B5G170	G3
5	.5	2.1	2.1	2.0	.2	.1	1.5	\$160	B5G210	G5
5 5	.5 .5	4.0 5.0	3.5 4.4	3.0 3.0	.3 .4	.1 .1	1.5 1.5	\$190 \$205	B5G400 B5G500	G6 G6
5	.5	5.0	3.6	2.6	.005	.005	.250	\$230	A5MT510	M6
5	.5	6.0	4.3	3.5	.005	.005	.250	\$250	A5MT600	M6
5	.5	8.0	7.0	5.0	.4	.1	1.5	\$255	B5G800	G9
5 5	.5 .5	9.0 10.0	7.2 9.0	5.5 7.0	.005 .4	.005 .1	.250 1.5	\$285 \$290	A5MT900 B5G1000	M9 G13
5	.5	12.0	10.0	8.0	.005	.005	.250	\$335	A5MT1200	M13
5	.5	17.0	14.5	12.0	.005	.005	.250	\$370	A5H1700	H8
5	.5	22.0	18.5	15.0	.005	.005	.250	\$415	A5H2200	H11
5 6	.5 1	32.0 .500	.500	.500	.005	.005 .1	.250 1	\$495 \$115	A5H3200 B6G50	H16 G3
6	.5	1.2	1.1	1.0	.1	.1	l i	\$140	B6G120	G3
6	.5	1.7	1.5	1.3	.2	.1	1.5	\$150	B6G170	G3
6	.5	3.2	3.1	3.0	.3	.1	1.5	\$185	B6G320	G6
6 6	.5 .5	4.9 6.0	3.5 4.5	2.5 3.5	.005 .005	.005	.250 .250	\$205 \$240	A6MT490 A6MT600	M6 M6
6	.5	8.5	7.5	5.2	.005	.005	.250	\$285	A6MT850	M9
6	.5	11.0	9.3	7.5	.005	.005	.250	\$335	A6MT1100	M13
6	.5	16.0	13.6	11.2	.005	.005	.250	\$375	A6H1600	H8
6 6	.5 .5	21.0 28.0	17.0 23.0	14.0 19.0	.005 .005	.005 .005	.250 .250	\$420 \$495	A6H2100 A6H2800	H11 H16
7	1	.500	.500	.500	.1	.05	1	\$120	B7G50	G3
7	1	1.0	1.0	1.0	.1	.1	1	\$150	B7G100	G3
7	.5	2.0	2.0	2.0	.2	.1	1.5	\$170	B7G200	G5
7 7	.5 .5	3.0 5.0	2.7 4.0	2.5 3.0	.3 .005	.1 .005	1.5 .250	\$195 \$240	B7G300 A7MT500	G6 M6
7	.5	6.5	5.2	4.0	.4	.1	1.0	\$250	B7G650	G9
7	.5	8.0	6.5	5.0	.005	.005	.250	\$290	A7MT800	M9
7	.5	10.0	8.0	7.0	.4	.1	1.5	\$300	B7G1000	G13
7 8	.5 1	.500	.500	7.0 .500	.005	.005	.250 1	\$335 \$120	A7MT1000 B8G50	M13 G3
8	1	1.0	1.0	1.0	.1	.1	l i	\$150	B8G100	G3
8	.5	2.0	2.0	2.0	.2	.1	1.5	\$170	B8G200	G5
8	.5	3.0	2.7	2.5	.2	.1	1.5	\$195	B8G300	G6
8 8	.5 .5	5.0 6.5	4.0 5.2	3.5 4.0	.005 .3	.005 .1	.250 1.5	\$240 \$260	A8MT500 B8G650	M6 G9
8	.5	8.0	6.5	5.0	.005	.005	.250	\$290	A8MT800	M9
8	.5	10.0	8.0	7.0	.4	.1	1.5	\$300	B8G1000	G13
8	.5	10.5	8.8	7.0	.005	.005	.250	\$335	A8MT1050	M13
8 8	.5 .5	20.0 28.0	16.8 23.0	13.5 19.0	.005 .005	.005 .005	.250 .250	\$440 \$495	A8H2000 A8H2800	H11 H16
9	1	.500	.500	.500	.1	.005	1	\$120	B9G50	G3
	1	1.0	1.0	1.0	.1	.1	i i	\$150	B9G100	G3
9								\$170		
9 9	.5	2.0	2.0	2.0	.2	.1	1.5		B9G200	G5
9 9 9	.5 .5	3.0	2.7	2.5	.2	.1	1.5	\$195	B9G300	G6
9 9	.5									

Nominal	Ad-	Out	put Curi		Regu	lation	Ripple			
Output Voltage	just ±V	40°C	Amps. 55°C	71°C	Load ± %*	Line ± %*	mV RMS	(\$) Price	Model	Case Size
10	1	.500	.500	.500	.1	.05	1	\$115	B10G50	G3
10 10	1 .5	1.0 2.0	1.0 2.0	1.0 2.0	.1 .2	.1 .1	1 1.5	\$140 \$170	B10G100 B10G200	G3 G5
10	.5	3.0	2.7	2.5	.2	.1	1.5	\$170	B10G300	G6
10	.5	4.5	3.6	2.7	.005	.005	.250	\$240	A10MT450	M6
10	.5	6.0	5.0	4.0	.3	.1	1.5	\$260	B10G600	G9
10 10	.5 .5	7.5 10.0	6.0 8.3	4.5 7.0	.005 .4	.005 .1	.250 1.5	\$295 \$300	A10MT750 B10G1000	M9 G13
10	.5	10.0	8.3	7.0	.005	.005	.250	\$335	A10MT1000	M13
10	.5	14.0	11.9	9.8	.005	.005	.250	\$390	A10H1400	H8
10	.5	18.0	15.0	12.0	.005	.005	.250	\$440	A10H1800	H11
10	.5 1	.500	.500	16.5 .500	.005 .1	.005	.250 1	\$495 \$115	A10H2500 B12G50	H16 G3
12	i	1.0	1.0	1.0	.1	.1	li l	\$140	B12G100	G3
12	.5	2.0	1.7	1.5	.2	.1	1.5	\$165	B12G200	G5
12	.5	3.0	2.7	2.5	.2	.1	1.5	\$190	B12G300	G6
12 12	.5 .5	3.8 4.0	3.3 3.3	2.6 2.6	.2 .005	.1 .005	1.5 .250	\$200 \$235	B12G380 A12MT400	G6 M6
12	.5	6.5	5.3	4.0	.3	.1	1.5	\$260	B12G650	G9
12	.5	6.5	5.3	4.0	.005	.005	.250	\$290	A12MT650	M9
12 12	.5 .5	9.0 9.0	7.5 7.5	6.0 6.0	.4 .005	.1 .005	1.5 .250	\$300 \$335	B12G900 A12MT900	G13 M13
12	.5	13.0	11.0	9.1	.005	.005	.250	\$390	A12H1300	H8
12	.5	17.0	14.3	11.5	.005	.005	.250	\$440	A12H1700	H11
12	.5	21.0	17.5	14.5	.005	.005	.250	\$495	A12H2100	H16
13	1	.500	.500 1.4	.500	.1	.05	1 1.5	\$130 \$165	B13G50 B13G150	G3 G3
13 13	1 .5	1.5 2.0	2.0	1.3 2.0	.1 .2	.1 .1	1.5	\$185	B13G150 B13G200	G5
13	.5	3.0	2.7	2.5	.2	.1	1.5	\$205	B13G300	G6
13	.5	3.5	3.0	2.5	.005	.005	.250	\$240	A13MT350	M6
13 13	.5 .5	5.0 8.0	4.5 7.5	4.0 7.0	.2 .3	.1 .1	1.5 1.5	\$255 \$300	B13G500 B13G800	G9 G13
13	.5	8.0	7.5	7.0	.005	.005	.250	\$335	A13MT800	M13
14	1	.500	.500	.500	.1	.05	1	\$130	B14G50	G3
14	1	1.5	1.4	1.3	.1	.1	1.5	\$165	B14G150	G3
14 14	.5 .5	2.0 3.0	2.0 2.7	2.0 2.5	.2 .2	.1 .1	1.5 1.5	\$185 \$205	B14G200 B14G300	G5 G6
14	.5	3.0	2.7	2.5	.005	.005	.250	\$235	A14MT300	M6
14	.5	5.0	4.5	4.0	.2	.1	1.5	\$250	B14G500	G9
14 14	.5 .5	7.0 8.0	6.5 7.5	6.0 7.0	.3 .005	.1 .005	1.5 .250	\$300 \$335	B14G700 A14MT800	G13 M13
15	1	.750	.750	.750	.1	.1	1	\$135	B15G75	G3
15	1	1.0	1.0	1.0	.1	.1	1	\$140	B15G100	G3
15	1	1.5	1.4	1.3	.1	.1	1.5	\$155	B15G150	G3
15 15	.5 .5	2.0 3.0	1.7 2.8	1.5 2.5	.1	.1 .1	1.5 1.5	\$170 \$195	B15G200 B15G300	G5 G6
15	.5	3.0	2.8	2.5	.005	.005	.250	\$215	A15MT300	M6
15	.5	4.2	3.8	3.0	.15	.1	1.5	\$235	B15G420	G9
15	.5	5.5 6.0	4.7	4.0	.005	.005	.250	\$290	A15MT550	M9 G9
15 15	.5 .5	7.0	5.0 6.0	4.0 5.0	.2	.1 .1	1.5 1.5	\$280 \$300	B15G600 B15G700	G13
15	.5	8.0	6.5	5.5	.005	.005	.250	\$335	A15MT800	M13
15	.5	11.5	9.7	8.0	.005	.005	.250	\$390	A15H1150	H8
15 15	.5 .5	15.0 19.0	12.8 16.3	10.5 13.5	.005 .005	.005	.250 .250	\$435 \$495	A15H1500 A15H1900	H11 H16
16	1	.300	.300	.300	.05	.05	1	\$100	B16G30	G3
16	.5	1.0	1.0	1.0	.1	.1	1	\$150	B16G100	G3
16 16	.5 .5	3.0 5.0	2.5 5.0	2.0 5.0	.15 .2	.1 .1	1 1.5	\$230 \$290	B16G300 B16G500	G9 G9
16	.5 .5	6.5	6.0	5.5	.005	.005	.250	\$335	A16MT650	M13
18	1	.300	.300	.300	.05	.05	1	\$100	B18G30	G3
18	1 _	.750	.750	.750	.1	.1	1	\$135	B18G75	G3
18 18	.5 .5	1.1 2.1	1.1 2.0	1.0 1.8	.1 .1	.1 .1	1	\$150 \$185	B18G110 B18G210	G5 G5
18	.5	2.1	2.1	2.0	.005	.005	.250	\$205	A18MT210	M6
18	.5	3.0	2.8	2.5	.15	.1	1	\$230	B18G300	G9
18 18	.5 .5	4.5 6.5	4.0 6.0	3.5 5.5	.005 .005	.005	.250 .250	\$280 \$335	A18MT450 A18MT650	M9 M13
18	.5	14.0	12.0	10.0	.005	.005	.250	\$440	A18H1400	H11
18	.5	18.0	15.5	13.0	.005	.005	.250	\$495	A18H1800	H16
20	1	.300	.300	.300 .750	.05	.05	1	\$100	B20G30	G3
20 20	1	.750 1.1	.750 1.1	1.0	.1 .1	.05 .1	1	\$135 \$150	B20G75 B20G110	G3 G5
20	.5	1.7	1.7	1.5	.1	.1	1.5	\$165	B20G170	G5
20	.5	2.0	2.0	2.0	.005	.005	.250	\$215	A20MT200	M6
20 20	.5 .5	2.7 4.0	2.0 3.5	1.2 3.0	.15 .005	.1 .005	1.5 .250	\$230 \$280	B20G270 A20MT400	G6 M9
20	.5	5.0	5.0	5.0	.15	.1	1.5	\$295	B20G500	G13
20	.5	6.0	5.5	5.0	.005	.005	.250	\$335	A20MT600	M13
20 20	.5	9.5 13.0	8.0 11.3	6.6 9.5	.005 .005	.005 .005	.250 .250	\$390 \$440	A20H950 A20H1300	H8 H11
20	.5 .5	16.0	14.0	12.0	.005	.005	.250	\$440	A20H1300 A20H1600	H16
				•				7.00		



<sup>\*</sup>or 2 mv, whichever is greater

<sup>\*</sup>or 2 mv, whichever is greater



#### **SERIES A & B**

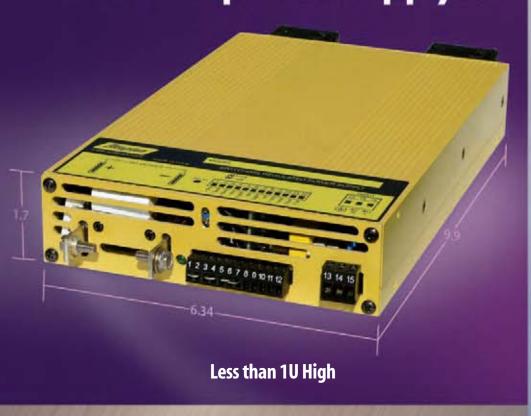
	Nominal	Ad-	Out	put Cur		Regu	lation	Ripple			
	Output Voltage	just ±V	40°C	Amps. 55°C	aτ 71°C	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
ľ	24	1	.300	.300	.300	.05	.05	1	\$100	B24G30	G3
ı	24 24	1	.750 1.1	.750 1.1	.750 1.0	.1 .1	.05 .1	1 1.5	\$140 \$155	B24G75 B24G110	G3 G5
ı	24	.5	1.7	1.7	1.5	.1	.1	1.5	\$170	B24G170	G5
ı	24	.5	2.1	2.0	2.0	.1	.1	1.5	\$190	B24G210	G5
ı	24 24	.5 .5	2.1 3.5	2.0 3.0	2.0 2.5	.005 .15	.005 .1	.250 1.5	\$225 \$245	A24MT210 B24G350	M6 G9
ı	24	.5	3.5	3.0	2.5	.005	.005	.250	\$290	A24MT350	M9
ı	24	.5	5.0	5.0	5.0	.15	.1	1.5	\$300	B24G500	G13
ı	24	.5	5.5	5.0	4.5	.005	.005	.250	\$335	A24MT550	M13
ı	24 24	.5 .5	8.5 12.0	7.2 10.5	5.9 9.0	.005	.005	.250 .250	\$390 \$440	A24H850 A24H1200	H8 H11
ı	24	.5	15.0	13.0	11.0	.005	.005	.250	\$495	A24H1500	H16
ſ	25	1	.300	.300	.300	.05	.05	1	\$120	B25G30	G3
ı	25 25	1	.750 1.1	.750 1.1	.750 1.1	.1 .1	.05 .1	1 1.5	\$145 \$165	B25G75 B25G110	G3 G5
ı	25	.5	1.7	1.7	1.5	.: .i	.: .1	1.5	\$195	B25G170	G5
ı	25	.5	2.1	2.1	2.0	.1	.1	1.5	\$200	B25G210	G5
ı	25	.5	3.5	3.0	2.5	.15	.1	1.5	\$250	B25G350	G9
ŀ	25 28	.5 1	5.0	5.0	5.0 .300	.15	.05	1.5	\$310 \$120	B25G500 B28G30	G13 G3
ı	28	1	.300 .500	.300 .500	.500	.05 .05	.05	l¦ l	\$135	B28G50	G3
I	28	1	.800	.800	.800	.1	.05	1	\$145	B28G80	G5
ı	28	1_	1.1	1.1	1.0	.1	.05	1	\$160	B28G110	G5
ı	28 28	.5 .5	1.8 2.1	1.6 2.1	1.5 2.0	.1 .1	.1 .1	1.5 1.5	\$190 \$200	B28G180 B28G210	G5 G5
ı	28	.5	2.1	2.1	2.0	.005	.005	.250	\$230	A28MT210	M6
ı	28	.5	3.0	2.7	2.5	.15	.1	1.5	\$240	B28G300	G9
ı	28 28	.5 .5	3.0 5.0	2.7 5.0	2.5 5.0	.005 .15	.005	.250 1.5	\$270 \$300	A28MT300 B28G500	M9 G13
ı	28	.5	5.0	5.0	5.0	.005	.005	.250	\$335	A28MT500	M13
ı	28	.5	8.0	6.8	5.6	.005	.005	.250	\$390	A28H800	Н8
ı	28	.5	11.0	9.5	8.0	.005	.005	.250	\$440	A28H1100	H11
ŀ	28 30	.5	.300	.300	.300	.005	.005	.250	\$495 \$120	A28H1400 B30GT30	H16 G3
ı	30	1	.500	.500	.500	.05	.05	1	\$140	B30GT50	G3
ı	30	1	1.1	1.1	1.0	.1	.1	1	\$170	B30GT110	G5
ı	30	.5 .5	1.7 2.1	1.6	1.5 2.0	.1 .1	.1 .1	1.5 1.5	\$190 \$205	B30GT170 B30G210	G5 G6
ı	30 30	.5 .5	2.1	2.1 2.1	2.0	.005	.005	.250	\$235	A30MT210	M6
ı	30	.5	3.0	2.7	2.5	.005	.005	.250	\$275	A30MT300	М9
ı	30	.5	5.0	5.0	5.0	.15	.1	1.5	\$305	B30GT500	G13
ı	30 30	.5 .5	5.0 7.5	5.0 6.3	5.0 5.2	.005 .005	.005	.250 .250	\$335 \$395	A30MT500 A30H750	M13 H8
ı	30	.5	10.0	9.0	8.0	.005	.005	.250	\$450	A30H1000	H11
ŀ	30	.5	14.0	12.0	10.0	.005	.005	.250	\$510	A30H1400	H16
ı	32 32	1	.300 .500	.300 .500	.300 .500	.05 .05	.05 .05	1	\$120 \$140	B32GT30 B32GT50	G3 G3
ı	32	1	1.0	1.0	1.0	.1	.1	i	\$170	B32GT100	G5
ı	32	1	1.5	1.5	1.5	.1	.1	1.5	\$200	B32GT150	G5
ı	32	.5 .5	1.8 2.5	1.6	1.3	.005 .005	.005	.250 .250	\$245 \$290	A32MT180 A32MT250	M6 M9
ı	32 32	.5 .5	9.0	2.1 7.5	1.7 6.0	.005	.005	.250	\$465	A32MT250 A32HT900	H11
ŀ	34	1	.300	.300	.300	.05	.05	1	\$120	B34GT30	G3
I	34	1	.800	.800	.800	.1	.1	1	\$170	B34GT80	G5
ŀ	34	1	1.5	1.5	1.5	.1	.1	1.5	\$205	B34GT150	G5
١	35 35	1	.100 .300	.100 .300	.100 .300	.05 .05	.05 .05	1	\$110 \$120	B35GT10 B35GT30	G3 G3
I	35	1	.500	.500	.500	.05	.05	1	\$145	B35GT50	G3
I	35	1	.600	.600	.600	.1	.05	1	\$160	B35GT60	G3
ŀ	35	1	.800	.800	.800	.1	.1	1.5	\$170	B35GT80	G5
I	36 36	1	.100 .500	.100 .500	.100 .500	.05 .05	.05 .05	1	\$110 \$145	B36GT10 B36GT50	G3 G3
I	36	1	.800	.750	.700	.1	.05	1	\$170	B36GT80	G5
I	36	.5	1.3	1.3	1.3	.1	.1	1.5	\$190	B36GT130	G6
I	36 36	.5 .5	1.3 2.3	1.3 2.0	1.3 1.8	.005 .1	.005 .1	.250 1.5	\$240 \$270	A36MT130 B36GT230	M6 G9
۱	36	.5	2.3	2.0	1.8	.005	.005	.250	\$290	A36MT230	М9
١	36	.5	4.0	3.2	2.5	.005	.005	.250	\$345	A36MT400	M13
ı	36 36	.5 .5	8.0 11.0	6.6 9.1	5.3 7.2	.005 .005	.005	.250 .250	\$465 \$565	A36HT800 A36HT1100	H11 H16
ŀ	40	1	.200	.200	.200	.05	.003	1	\$130	B40GT20	G3
1	40	1	.400	.400	.400	.05	.05	1	\$155	B40GT40	G3
I	40	1	.500	.500	.500	.1	.05	1	\$170	B40GT50	G5
ŀ	40	1	1.0	1.0	1.0	.1	.1	1.5	\$195	B40GT100	G6
1	45 45	1	.200 .400	.200 .400	.200 .400	.05 .05	.05 .05	1	\$130 \$165	B45GT20 B45GT40	G3 G3
L		-							50	50.40	

Nominal	Ad-	Out	put Curi Amps.		— <u> </u>		Ripple			
Output Voltage	just ±V	40°C	55°C	71°C	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
48	1	.200	.200	.200	.05	.05	1	\$130	B48GT20	G3
48	1	.400	.400	.400	.05	.05	1	\$170	B48GT40	G3
48 48	1	.600 1.1	.600 1.0	.600 .600	.1 .1	.1 .1	1 1.5	\$205 \$230	B48GT60 B48GT110	G5 G6
48	1	1.2	1.0	.800	.005	.005	.250	\$255	A48MT120	M6
48	1	1.8	1.6	1.2	.005	.005	.250	\$295	A48MT180	M9
48	1	3.0	2.6	2.1	.005	.005	.250	\$345	A48MT300	M13
48 48	1	6.0 8.5	5.0 7.2	4.0 5.5	.005	.005	.250 .250	\$465 \$565	A48HT600 A48HT850	H11 H16
50	1	.400	.400	.400	.05	.05	1	\$185	B50GT40	G3
50	1	.500	.500	.500	.05	.05	1	\$215	B50GT50	G5
50	1	1.0	.800	.700	.005	.005	.250	\$270	A50MT100	M6
50 50	1	1.5 2.7	1.3 2.3	1.0 1.8	.005	.005	.250 .250	\$310 \$360	A50MT150 A50MT270	M9 M13
50	1	6.0	5.0	4.0	.005	.005	.250	\$475	A50HT600	H11
50	1	8.0	6.6	5.2	.005	.005	.250	\$565	A50HT800	H16
55	1	.500	.500	.500	.05	.05	1	\$225	B55GT50	G5
60	1	.200	.200	.200	.05	.05	1	\$155	B60GT20	G3
60 60	1	.300 .400	.300 .400	.300 .400	.05 .05	.05 .05	1	\$190 \$225	B60GT30 B60GT40	G3 G5
60	1	.850	.720	.600	.005	.005	.250	\$275	A60MT85	M6
60	1	1.2	1.0	.800	.005	.005	.250	\$310	A60MT120	M9
60	1	2.5	2.1	1.7	.005	.005	.250	\$360	A60MT250	M13
60 60	1	5.0 7.0	4.1 5.8	3.3 4.6	.005	.005	.250 .250	\$480 \$570	A60HT500 A60HT700	H11 H16
65	1	.300	.300	.300	.05	.05	1	\$190	B65GT30	G3
70	1	.100	.100	.100	.05	.05	1	\$145	B70GT10	G3
70	1	.300	.300	.300	.05	.05	1	\$190	B70GT30	G3
75	1	.050	.050	.050	.05	.05	1	\$130	B75GT05	G3
75 75	1	.200 .600	.200 .500	.200 .400	.05 .005	.05 .005	.250	\$185 \$275	B75GT20	G3 M6
75 75	1	1.0	.830	.660	.005	.005	.250	\$325	A75MT60 A75MT100	M9
75	1	2.0	1.8	1.5	.005	.005	.250	\$360	A75MT200	M13
75	1	4.0	3.3	2.6	.01	.01	1	\$480	A75HT400	H11
75	1	5.6	4.6	3.6	.01	.01	1	\$575	A75HT560	H16
80 80	1	.100 .200	.100 .200	.100 .200	.05 .05	.05 .05	1	\$160 \$190	B80GT10 B80GT20	G3 G3
85	1	.200	.200	.200	.05	.05	1	\$190	B85GT20	G3
90	1	.200	.200	.200	.05	.05	1	\$190	B90GT20	G3
90	1	.500	.400	.300	.005	.005	.250	\$275	A90MT50	M6
90	1	.800 1.5	.700	.600 1.0	.005	.005	.250	\$325	A90MT80	M9 M13
90 90	1	3.3	1.3 2.7	2.1	.005	.005 .01	.250	\$360 \$490	A90MT150 A90HT330	H11
90	1	4.4	3.6	2.9	.01	.01	1	\$580	A90HT440	H16
95	1	.200	.200	.200	.05	.05	1	\$195	B95GT20	G3
100	1	.100	.100	.100	.05	.05	1	\$180	B100GT10	G3
100 100	1	.200 .460	.200 .460	.200 .340	.05 .1	.05 .1	1 1.5	\$195 \$240	B100GT20 B100GT46	G3 G6
100	1	.650	.650	.650	ii .	.1	1.5	\$270	B100G140	G6
100	1	.700	.600	.500	.005	.005	.250	\$310	A100M70	M6
100	1	1.3	1.2	1.0	.005	.005	.250 1	\$360 \$490	A100MT130	M13
100 100	1	3.0 4.0	2.5 3.3	2.0 2.6	.01 .01	.01 .01	1	\$580	A100HT300 A100HT400	H11 H16
110	1	.200	.200	.200	.05	.05	1	\$200	B110GT20	G3
120	1	.100	.100	.100	.05	.05	1	\$185	B120GT10	G3
120	1	.200	.200	.200	.05	.05	1	\$200	B120GT20	G3
120	1	.400	.400	.300	.1	.1	1.5	\$235	B120GT40	G6
120 120	1	.550 .600	.550 .500	.550 .400	.1 .005	.1 .005	1.5 .250	\$280 \$330	B120G55 A120M60	G6 M6
120	1	1.2	1.1	1.0	.005	.005	.250	\$360	A120MT120	M13
120	1	2.5	2.0	1.6	.01	.01	1	\$500	A120HT250	H11
120	1	3.5	2.9	2.3	.01	.01	1	\$590	A120HT350	H16
125 125	1	.200 .400	.200 .400	.200 .300	.05 .1	.05 .1	1 1.5	\$230 \$245	B125GT20 B125GT40	G3 G6
125	1	.500	.400	.300	.005	.005	.250	\$340	A125MT50	M6
125	1	.550	.550	.550	.1	.1	1.5	\$290	B125G55	G6
125	1	1.2	1.1	1.0	.005	.005	.250	\$370	A125MT120	M13
125 125	1	2.5 3.5	2.0 2.9	1.6 2.3	.01 .01	.01 .01	1	\$510 \$595	A125HT250 A125HT350	H11 H16
130	1	.200	.200	.200	.05	.05	1	\$235	B130GT20	G3
135	1	.200	.200	.200	.05	.05	1	\$235	B135GT20	G3
140	1	.200	.200	.200	.05	.05	1	\$235	B140GT20	G3
150	1	.100	.100	.100	.05	.05	1	\$190	B150GT10	G3
150	1	.200	.200	.200	.05	.05	1	\$230	B150GT20	G3
150 150	1	.320 .420	.320 .420	.250 .420	.1 .1	.1 .1	1.5 1.5	\$250 \$270	B150GT32 B150GT42	G6 G9
150	1	1.0	.900	.800	.005	.005	.250	\$390	A150MT100	M13
150	1	3.0	2.5	2.0	.01	.01	1	\$605	A150HT300	H16
200	1	.100	.100	.100	.1	.05	1.5	\$230	B200GT10	G3



NEW!

# Acopian's most versatile 720 watt power supply...



#### **Featuring**

- Constant Current Control
- Constant Voltage Control
- Can be paralleled for Current Share
- Output can be inhibited with TTL level
- Can be paralleled for N+1 Redundancy
- Wide Adjust models with ranges down to 0 Volts
- Programmable models with 0-10V control voltages
- Outputs to 50 VOLTS, 720 WATTS
- 5 Year Warranty

For complete specifications, see pages 51-53.

Order factory direct and save.

We accept American Express, VISA and MasterCard.

**Now with ONLINE ORDERING!** 



#### **Low Profile**

# **SWITCHING REGULATED** (to 720 watts) (Power Factor Correction and Universal Input)

AC-DC or DC-DC single output & wide adjust output

- Shipped Within 6 Days
- Five Year Warranty

#### STANDARD FEATURES

- Universal input
- Power Factor Correction
- Constant voltage and constant current modes
- Voltage and current monitor terminals
- · Voltage and current programming capabilities
- Short circuit and overload protection
- Thermal protection
- · Low Profile
- No minimum load required
- Adjustable down to 0 volts ('Wide Adjust' models)
- Can be paralleled for increased current (option P)
- N+1 Redundancy (option N)
- · Internal EMI Filter and RFI Shielding
- · Pluggable connectors for input and control wiring
- Remote Sensing
- · 'Vout OK' signal monitor
- · 'Soft start' operation

#### **SPECIFICATIONS**

**Input Voltage:** 90-265 VAC, 49-420 Hz, single phase, or 110-350 Vdc.

208 VAC 3-phase is also available (see Options).
AC input (maximum): 8A (WL7 case), 12A (WL9 case)
DC input (maximum): 5.75A (WL7 case), 8.8A (WL9 case)
DC input may be connected without regard to polarity.

Inrush current: Cold start, (thermistor limiter) 33A peak @ 115 VAC (typical); 65A peak @ 230 VAC (typical).

Startup Time: 800 mS (typical).

Input Undervoltage: An input of less than 90 VAC will

not damage power supply.

Power Factor: 0.99 typical at 115 VAC, 60Hz and full load.

Complies with EN61000-3-2.

Regulation (in constant voltage mode):

Line Regulation: ±0.05% Load Regulation: ±0.05%

Regulation, Ripple (in constant current mode):

Line Regulation: ±0.2% or 30 mA. Load Regulation: ±0.5% or 100 mA.

Current Ripple: 0.5% rms.

Ambient Operating Temperature: 0 to +71°C.

Temperature Coefficient (after 30 minute warm-up):

Voltage mode; ±0.02%/°C (typical).



NEW!!

Current mode; ±0.1%/°C (typical).

**Drift (voltage mode or current mode):** ±0.1% (typical) over 8 hours, after 30 minute warmup.

Storage Temperature: -40 to +85°C.

Holdup Time: 20 mS minimum with full load.

**Transient Response:** 300  $\mu$ S to return to ±1% of output setting. Maximum of ±3% output excursion following a load step change from 50% to 100%.

**Efficiency:** See table, (typical, at 115 VAC, with full load.) **Polarity:** Output is floating and may be used in either polarity.

**Remote Sensing:** Compensates up to 0.5 Vdc drop per output line (or within the limits of the output voltage adjustment range). (Wide Adjust models compensate up to 0.5 Vdc drop per output line.

**Output Adjustment:** Voltage and current output adjustments are located on the front. Output adjustment may also be controlled by using remotely located potentiometers.

Output Programming (Wide Adjust models): The output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +10Vdc (0 to +5Vdc for models with option "C5"). Voltage mode accuracy: 0.5%. Current mode accuracy: 3% for models with greater than 10 amps output current and 4% for models with less than 10 amps output current. Accuracy percentages do not apply below 5% of output rating.

**Voltage Monitor Terminal:** Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 90v models) or 100:1 (for 100v to 135v models). Accuracy is 0.5% of maximum rated output voltage.

For models with 0-5v programming option "C5": Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 45v models) or 100:1 (for 48v to 135v models). Accuracy is 0.5% of maximum rated output voltage.



**Current Monitor Terminal:** For models with greater than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 100 mV/Amp (accuracy is 3% of maximum rated output current). For models with less than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 1000 mV/Amp (accuracy is 3% of maximum rated output current).

For models with 0-5v programming option "C5": For models with greater than 45 amps output current: permits remote monitoring of output current, stepped down by a ratio of 10 mV/Amp (accuracy is 5% of maximum rated output current). For models with less than 45 amps output current: permits remote monitoring of output current, stepped down by a ratio 100 mV/Amp (accuracy is 3% of maximum rated output current).

**Overload/Short Circuit Protection:** A short or overload forces the power supply into constant current mode, with automatic recovery.

**Overvoltage Protection:** Latches power supply OFF, reset by momentarily removing AC input power. (Models with 'N' option reset automatically.)

**Thermal Protection:** Thermostat(s), self-resetting.

**Internal Failure Protection:** Provided by internal fuse.

**Output Inhibit:** Applying between +3 and +15 Vdc to the Inhibit terminal will disable the supply. 'Output Enable' is also available (see Options).

**Vout OK:** When the power supply's output voltage is between -10% and +15% of the nominal output voltage, 'Vout OK' will be between +3 and +5Vdc(high). When the output voltage is outside the -10%, +15% window, the 'Vout OK' voltage will go low (approx 0.5 Vdc). 'Vout OK' can source 1 mA or sink up to 5 mA. (Not available on Wide Adjust Output models.)

Output Indicator (DC on): Green LED.

Switching Frequency: 110 kHz (typical).

EMI: Designed to meet FCC Part 15 and EN55022, Class A.

Dielectric Withstand VoltageIsolationInput to output:4242 Vdc500 VACInput to case:2121 Vdc500 VACOutput to case:750 Vdc300 VAC

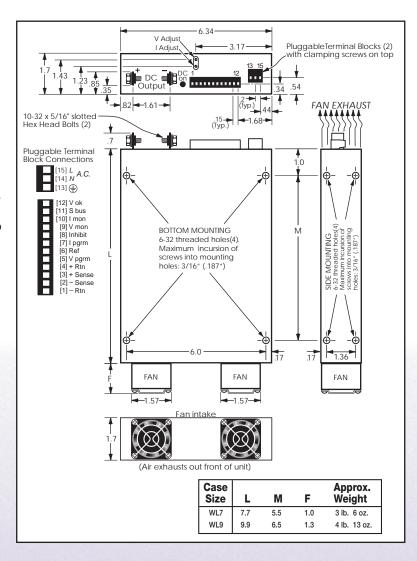
**Cooling:** Forced-air cooled; air enters rear of power supply and exits from front cover.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface use Mounting Kit NP6, or for DIN rail mounting use Mounting Kit WL35DIN or WLH35DIN. See accessory Mounting Kits on page 91.

#### **OPTIONS**

**Output Enable:** To enable the DC output, the Inhibit terminal must be tied to the -DC output. An open collector or contact closure can be used. To order, add suffix "E" to the model number. No increase in price.

N+1 Redundancy: Allows up to 4 like models to be wired in N+1 redundancy. An internal isolation OR-ing diode is included in each power supply. Current share accuracy is ±5% (typical). Power supply output current must be derated by 10%. (Available on SIngle Output models only.) This option includes the "P" (Parallelable) option



listed below, so if you specify the "N" option do not also specify the "P" option. To order, add suffix "N" to the model number, and increase standard price by \$50.00.

**Parallelable:** Allows up to 4 like models to be directly wired in parallel for increased current capability. Current share accuracy is ±5% (typical). Power supply output current must be derated by 5%. (Available on SIngle Output models only.) This option is included in the "N" (**N+1 Redundancy**) option listed above, so if you specify the "N" option, do not also specify the "P" option. To order, add suffix "P" to the model number, and increase standard price by \$25.00.

**0-5v** Programming (instead of the standard 0-10v Programming): Output voltage and current of standard models may be programmed from 0 to full rating by means of control voltage inputs of 0 to +10Vdc. For programming with 0 to +5Vdc control voltages, add suffix "C5" to the model number, and increase standard price by \$40.00. Voltage mode accuracy: 1%. Current mode accuracy: 5%. Accuracy percentages do not apply below 5% of output rating. (Available on Wide Adjust Output models only.)

**Thermostatically Controlled Fan:** Fan runs at reduced speed until maximum speed is required. To order, add suffix "D2" to the model number, and increase standard price by \$30.00.

**Output Blocking Protection Diode:** Used for battery charging or redundant applications. Derate output by 10%. To order, add suffix "E1" to the model number, and increase standard price by \$25.00.

**208 VAC 3-phase Input Voltage:** 170-240 VAC, 60-400 Hz. To order, add suffix "L4" to the model number, and increase standard price by \$115.00.

#### **Low Profile SWITCHING REGULATED (to 720 watts)**

#### **SINGLE OUTPUT**

Nominal	Adjust		Current	I	le mV	Effic.			
Output	Range	<u> </u>	os. at	`	(Hz BW)	(Typ.)	(\$)		Case
Voltage	± V	40°C	71°C	RMS	P-P	%	Price	Model	Size
3.3	.25	40	30	15	50	61	590	W3.3LT4000	WL7
3.3	.25	70	49	15	50	61	775	W3.3LT7000	WL9
5	.25	40	30	15	50	64	590	W5LT4000	WL7
5	.25	70	49	15	50	64	775	W5LT7000	WL9
6	.25	40	30	15	50	65	590	W6LT4000	WL7
6	.25	68	47.6	15	50	65	775	W6LT6800	WL9
7	.5	40	29	15	50	65	590	W7LT4000	WL7
7	.5	66	46.2	15	50	65	775	W7LT6600	WL9
8	.5	39	28	30	100	67	590	W8LT3900	WL7
8	.5	64	44.8	30	100	67	775	W8LT6400	WL9
9	.5	38.8	27.2	30	100	67	590	W9LT3880	WL7
9	.5	62	43.4	30	100	67	775	W9LT6200	WL9
10	.5	37.5	26.3	30	100	68	590	W10LT3750	WL7
10	.5	60	42	30	100	68	775	W10LT6000	WL9
12	1	37.5	26.3	30	100	73	590	W12LT3750	WL7
12	1	60	42	30	100	73	775	W12LT6000	WL9
13	1	34.6	24.2	30	100	73	590	W13LT3460	WL7
13	1	55.4	38.8	30	100	73	775	W13LT5540	WL9
14	1	32.1	22.5	30	100	73	590	W14LT3210	WL7
14	1	51.4	35.9	30	100	73	775	W14LT5140	WL9
15	1	30	21	30	100	73	590	W15LT3000	WL7
15	1	48	33.6	30	100	73	775	W15LT4800	WL9
16	1	28.1	19.7	30	100	73	590	W16LT2810	WL7
16	1	45	31.5	30	100	73	775	W16LT4500	WL9
18	1	25	17.5	30	100	75	590	W18LT2500	WL7
18	1	40	28	30	100	75	775	W18LT4000	WL9
20	1	22.5	15.8	30	100	76	590	W20LT2250	WL7
20	1	36	25.2	30	100	76	775	W20LT3600	WL9
22	1	20.5	14.4	30	100	76	590	W22LT2050	WL7
22	1	32.7	22.9	30	100	76	775	W22LT3270	WL9
24	1	18.8	13.2	30	100	78	590	W24LT1880	WL7
24	1	30	21	30	100	78	775	W24LT3000	WL9
25	1	18	12.6	30	100	78	590	W25LT1800	WL7
25	1	28.8	20.2	30	100	78	775	W25LT2880	WL9
26	1	17.3	12.1	30	100	78	590	W26LT1730	WL7
26	1	27.7	19.4	30	100	78	775	W26LT2770	WL9
28	1	16	11.2	30	100	78	590	W28LT1600	WL7
28	1	25.7	18	30	100	78	775	W28LT2570	WL9
30	1	15	10.5	45	150	78	590	W30LT1500	WL7
30	1	24	16.8	45	150	78	775	W30LT2400	WL9

Nominal Output	Adjust Range		Current s. at		le mV /IHz BW)	Effic. (Typ.)	(\$)		Case
Voltage	± V	40°C	71°C	RMS	P-P	%	Price	Model	Size
32	1	14	9.8	45	150	78	590	W32LT1400	WL7
32	1	22.5	15.8	45	150	78	775	W32LT2250	WL9
34	1	13.2	9.3	45	150	78	590	W34LT1320	WL7
34	1	21.2	14.8	45	150	78	775	W34LT2120	WL9
36	1	12.5	8.8	45	150	78	590	W36LT1250	WL7
36	1	20	14	45	150	78	775	W36LT2000	WL9
38	1	11.8	8.3	45	150	78	590	W38LT1180	WL7
38	1	18.9	13.2	45	150	78	775	W38LT1890	WL9
40	1	11.3	7.9	45	150	79	590	W40LT1130	WL7
40	1	18	12.6	45	150	79	775	W40LT1800	WL9
42	1	10.7	7.5	45	150	79	590	W42LT1070	WL7
42	1	17.1	12	45	150	79	775	W42LT1710	WL9
45	1	10	7	45	150	79	590	W45LT1000	WL7
45	1	16	11.2	45	150	79	775	W45LT1600	WL9
48	1	9.4	6.6	45	150	79	590	W48LT940	WL7
48	1	15	10.5	45	150	79	775	W48LT1500	WL9
50	1	9	6.3	44	150	79	590	W50LT900	WL7
50	1	14.4	10	44	150	79	775	W50LT1440	WL9
55	1	8.2	5.7	44	150	79	590	W55LT820	WL7
55	1	13.1	9.2	44	150	79	775	W55LT1310	WL9
60	1	7.5	5.3	44	150	79	590	W60LT750	WL7
60	1	12	8.4	44	150	79	775	W60LT1200	WL9
70	1	6.4	4.5	66	225	79	590	W70LT640	WL7
70	1	10.3	7.2	66	225	79	775	W70LT1030	WL9
75	1	6	4.2	66	225	79	590	W75LT600	WL7
75	1	9.6	6.7	66	225	79	775	W75LT960	WL9
80	1	5.6	3.9	66	225	79	590	W80LT560	WL7
80	1	9	6.3	66	225	79	775	W80LT900	WL9
90	1	5	3.5	66	225	79	590	W90LT500	WL7
90	1	8	5.6	66	225	79	775	W90LT800	WL9
100	1	4.5	3.2	88	300	79	590	W100LT450	WL7
100	1	7.2	5	88	300	79	775	W100LT720	WL9
110	1	4.1	2.9	88	300	79	590	W110LT410	WL7
110	1	6.5	4.5	88	300	79	775	W110LT650	WL9
120	1	3.8	2.7	88	300	79	590	W120LT380	WL7
120	1	6	4.2	88	300	79	775	W120LT600	WL9
125	1	3.6	2.5	88	300	79	590	W125LT360	WL7
125	1	5.7	4	88	300	79	775	W125LT570	WL9
135	1	3.3	2.3	103	350	79	590	W135LT330	WL7
135	1	5.3	3.7	103	350	79	800	W135LT530	WL9

#### **WIDE ADJUST OUTPUT -**

	Output Voltage		Current os. at		le mV MHz BW)	Effic. (Typ.)	(\$)		Case
	Range	40°C	71°C	RMS	P-P	%*	Price	Model	Size
Г	0-5	40	31	15	50	64	615	Y05LX4000	WL7
	0-5	70	49	15	50	64	800	Y05LX7000	WL9
	0-8	40	28	15	100	67	615	Y08LX4000	WL7
L	0-8	64	44	15	100	67	800	Y08LX6400	WL9
	0-10	37	26	30	100	68	615	Y010LX3700	WL7
	0-10	60	42	30	100	68	800	Y010LX6000	WL9
	0-14	32	22	30	100	70	615	Y014LX3200	WL7
	0-14	51	35	30	100	70	800	Y014LX5100	WL9
	0-16	28	20	30	100	70	615	Y016LX2800	WL7
	0-16	45	31	30	100	70	800	Y016LX4500	WL9
Г	0-22	20	14	30	100	73	615	Y022LX2000	WL7
L	0-22	32	22	30	100	73	800	Y022LX3200	WL9
	0-30	15	11	45	150	75	615	Y030LX1500	WL7
L	0-30	24	16	45	150	75	800	Y030LX2400	WL9
	0-40	11	8	45	150	76	615	Y040LX1100	WL7
L	0-40	18	12	45	150	76	800	Y040LX1800	WL9
	0-50	9	6	45	150	76	615	Y050LX900	WL7
L	0-50	15	10	45	150	76	800	Y050LX1500	WL9

* At	maximum	output	voltage	

1 00								
Output Voltage		Current os. at		le mV MHz BW)	Effic. (Typ.)	(\$)		Case
Range	40°C	71°C	RMS	P-P	<b>%</b> *	Price	Model	Size
0-60	7.5	5.3	44	150	79	615	Y060LX750	WL7
0-60	12	8.4	44	150	79	800	Y060LX1200	WL9
0-70	6.4	4.5	66	225	79	615	Y070LX640	WL7
0-70	10.3	7.2	66	225	79	800	Y070LX1030	WL9
0-75	6	4.2	66	225	79	615	Y075LX600	WL7
0-75	9.6	6.7	66	225	79	800	Y075LX960	WL9
0-80	5.6	3.9	66	225	79	615	Y080LX560	WL7
0-80	9	6.3	66	225	79	800	Y080LX900	WL9
0-90	5	3.5	66	225	79	615	Y090LX500	WL7
0-90	8	5.6	66	225	79	800	Y090LX800	WL9
0-100	4.5	3.2	88	300	79	615	Y0100LX450	WL7
0-100	7.2	5	88	300	79	800	Y0100LX720	WL9
0-110	4.1	2.9	88	300	79	615	Y0110LX410	WL7
0-110	6.5	4.5	88	300	79	800	Y0110LX650	WL9
0-120	3.8	2.7	88	300	79	615	Y0120LX380	WL7
0-120	6	4.2	88	300	79	800	Y0120LX600	WL9
0-125	3.6	2.5	88	300	79	615	Y0125LX360	WL7
0-125	5.7	4	88	300	79	800	Y0125LX570	WL9
0-135	3.3	2.3	103	350	79	615	Y0135LX330	WL7
0-135	5.3	3.7	103	350	79	800	Y0135LX530	WL9

<sup>\*</sup> At maximum output voltage





# Gold Box SWITCHING REGULATED

AC-DC

single output & wide adjust output

- Shipped Within 9 Days
- U.L. Recognized (3.3v to 48v models)
- Five Year Warranty

These ruggedly-built power supplies have tightly regulated outputs and low output ripple. Features include status indicator lights, overvoltage protection, EMI filtering, 'soft start' operation and provision for external output inhibiting (TTL-compatible).



**Input Voltage:** 90-132 VAC, 49-61 Hz, single phase. For models W12GT95, W15GT78, W24GT50, W28GT42 and W48GT25, the use of a 30A line is recommended and when operating on 50 Hz input, derate output by 5%.

Startup Time: 400 mS maximum (250 mS typical).

Input Undervoltage: An input of less than 90 VAC (180 VAC with

"-230" option) will not damage power supply.

Load Regulation: Line Regulation:

3.3v to 48v Models: ±0.05% 3.3v to 48v Models: ±0.05% 50v to 125v Models: ±0.1% 50v to 125v Models: ±0.1%

**Remote Voltage Programming:** The output voltage may be controlled by means of an external potentiometer (2500 ohms for single output models; 50,000 ohms for wide adjust output models).

Polarity: Output is floating and may be used in either polarity.

**Drift:** ±0.1% typical over 8 hours, after 30 minute warmup.

Temperature Coefficient: ±0.02%/°C (Typical).

Holdup Time: 33 mS minimum (At nominal input voltage, with full load).

**Transient Response:** 300  $\mu$ S to return to  $\pm 1\%$  of output setting. Maximum of  $\pm 3\%$  output excursion following a load step change from 50% to 100%.

**Remote Sensing:** Compensates up to 0.5 volt drop per output line, within the limits of the output voltage adjustment range.

**Overload/Short Circuit Protection:** Foldback current limiting with automatic recovery.

**Overvoltage Protection:** Latches power supply OFF, reset by momentarily removing AC input power. Red indicator lights to indicate latchup.

**Output Inhibit:** Applying between +2 and +30 Vdc to the inhibit terminal will disable the supply (TTL compatible).

Thermal Protection: Thermostat, self-resetting.



Efficiency: See table. (Typical, at nominal input voltage, with full

load.)

Ambient Operating Temperature: 0 to +71°C.

**Storage Temperature:** -40 to +85°C. **Terminal Strip Cover:** Clips on.

Cooling: Forced-air cooled (ball bearing fan); air enters

back of power supply and exits from front.

Switching Frequency: 55 kHz (Typical). Isolation: Input to output: 1400 Vdc

Input to case: 1400 Vdc
Output to case: 400 Vdc

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

**230 Volt Input:** For applications where operation on an input of 180-264 VAC, 49-61 Hz, is desired. To order, add suffix "–230" to the model number and \$40.00 to the standard price. The "–230" option requires two additional days.

#### **WIDE ADJUST OUTPUT MODELS**

	Output Voltage		Current os. at		le mV MHz BW)	Effic. (Typ.)	(\$)		Case
	Range	40°C	71°C	RMS	P-P	`%**	Price	Model	Size
	5-15	23	16	15	100	76	650	W515MT23	WM6
	5-15	36	25	15	100	76	850	W515MT36	WM9
	5-15	54	38	15	100	76	1050	W515GT54	WG7
	5-30	13	9	25	150	81	650	W530MT13	WM6
	5-30	19	13	25	150	81	850	W530MT19	WM9
	5-30	30	20	25	150	81	1050	W530GT30	WG7
	15-50	8	5	25	150	82	650	W1550MT8	WM6
Н	15-50	12	8.5	25	150	82	850	W1550MT12	WM9
ì	15-50	18	12	25	150	82	1050	W1550GT18	WG7

<sup>\*\*</sup> At maximum output voltage

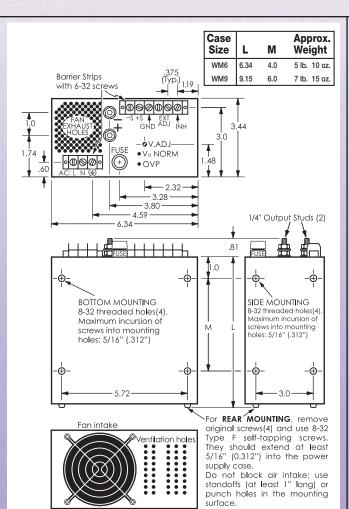


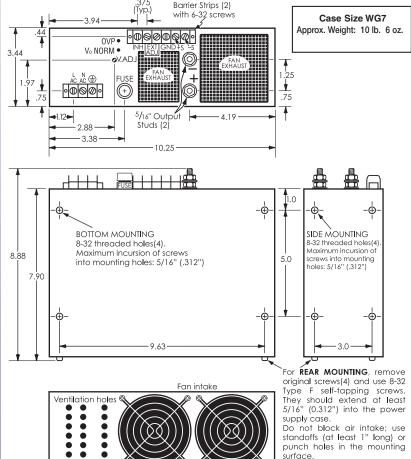
#### **SINGLE OUTPUT MODELS**

Nominal Output	Adjust Range		Current s. at		le mV /IHz BW)	('96')	(\$)		Case
Voltage	±V	40°C	71°C	RMS	P-P	%	Price	Model	Size
3.3	.25	65	45	10	50	65	595	W3.3MT65	WM6
3.3	.25	100	70	10	50	65	795	W3.3MT100	WM9
3.3	.25	150	105	10	50	65	995	W3.3GT150	WG7
5	.25	65	45	10	50	70	595	W5MT65	WM6
5	.25	100	70	10	50	70	795	W5MT100	WM9
5	.25	150	105	10	50	70	995	W5GT150	WG7
6	.25	56	39	10	50	71	595	W6MT56	WM6
6	.25	86	60	10	50	71	795	W6MT86	WM9
8	.25	41	28	15	100	73	595	W8MT41	WM6
8	.25	63	44	15	100	73	795	W8MT63	WM9
9	.25	37	26	15	100	73	595	W9MT37	WM6
9	.25	57	40	15	100	73	795	W9MT57	WM9
10	.5	34	24	15	100	74	595	W10MT34	WM6
10	.5	52	36	15	100	74	795	W10MT52	WM9
12 12 12 12	.5 .5 .5	29 45 68 95	20 32 47 66	15 15 15 15	100 100 100 100	76 76 76 76	595 795 995 1095	W12MT29 W12MT45 W12GT68 W12GT95	WM6 WM9 WG7 WG7
15 15 15 15	.5 .5 .5	23 36 54 78	16 25 38 54	15 15 15 15	100 100 100 100	76 76 76 76	595 795 995 1095	W15MT23 W15MT36 W15GT54 W15GT78	WM6 WM9 WG7 WG7
18	.5	20	14	15	100	78	595	W18MT20	WM6
18	.5	31	22	15	100	78	795	W18MT31	WM9
20	1	19	13	15	100	79	595	W20MT19	WM6
20		28	19	15	100	79	795	W20MT28	WM9
24 24 24 24	1 1 1	16 25 38 50	11 18 26 35	15 15 15 15	100 100 100 100	81 81 81 81	595 795 995 1095	W24MT16 W24MT25 W24GT38 W24GT50	WM6 WM9 WG7 WG7
28 28 28 28	1 1 1	14 21 32 42	10 15 22 29	15 15 15 15	100 100 100 100	81 81 81 81	595 795 995 1095	W28MT14 W28MT21 W28GT32 W28GT42	WM6 WM9 WG7 WG7
30	1	13	9	25	150	81	595	W30MT13	WM6
30		19	13	25	150	81	795	W30MT19	WM9
36	1	10	7	25	150	81	595	W36MT10	WM6
36		15	11	25	150	81	795	W36MT15	WM9

Nominal Output	Adjust Range		Output Current Amps. at		le mV (Hz BW)	Effic. (Typ.)	(\$)		Case
Voltage	±Υ	40°C	71°C	RMS	P-P	%	Price	Model	Size
40	1	9	6	25	150	82	595	W40MT9	WM6
40		14	10	25	150	82	795	W40MT14	WM9
48 48 48 48	1 1 1	8 12 19 25	5 8.5 13 17	25 25 25 25	150 150 150 150	82 82 82 82	595 795 995 1095	W48MT8 W48MT12 W48GT19 W48GT25	WM6 WM9 WG7 WG7
50*	1 1 1	7.7	5.4	50	150	80	595	W50MT7.7	WM6
50*		12	8.4	50	150	80	795	W50MT12	WM9
50*		18.2	12.8	50	150	80	995	W50GT18.2	WG7
55*	1	7	4.9	50	150	80	595	W55MT7	WM6
55*	1	10.9	7.6	50	150	80	795	W55MT10.9	WM9
55*	1	16.6	11.6	50	150	80	995	W55GT16.6	WG7
60*	1	6.4	4.5	50	150	80	595	W60MT6.4	WM6
60*	1	10	7.0	50	150	80	795	W60MT10	WM9
60*	1	15.2	10.6	50	150	80	995	W60GT15.2	WG7
70*	1	5.5	3.8	67	250	80	595	W70MT5.5	WM6
70*	1	8.6	6	67	250	80	795	W70MT8.6	WM9
70*	1	13	9.1	67	250	80	995	W70GT13	WG7
75*	1	5.1	3.6	67	250	80	595	W75MT5.1	WM6
75*	1	8	5.6	67	250	80	795	W75MT8	WM9
75*	1	12.2	8.5	67	250	80	995	W75GT12.2	WG7
80*	1	4.8	3.4	67	250	80	595	W80MT4.8	WM6
80*	1	7.5	5.3	67	250	80	795	W80MT7.5	WM9
80*	1	11.4	8	67	250	80	995	W80GT11.4	WG7
90*	1	4.3	3	100	250	80	595	W90MT4.3	WM6
90*	1	6.7	4.7	100	250	80	795	W90MT6.7	WM9
90*	1	10.1	7.1	100	250	80	995	W90GT10.1	WG7
100*	2	3.8	2.7	150	350	80	595	W100MT3.8	WM6
100*	2	6	4.2	150	350	80	795	W100MT6	WM9
100*	2	9.1	6.4	150	350	80	995	W100GT9.1	WG7
110*	2	3.5	2.4	150	350	80	595	W110MT3.5	WM6
110*	2	5.5	3.8	150	350	80	795	W110MT5.5	WM9
110*	2	8.3	5.8	150	350	80	995	W110GT8.3	WG7
120*	2	3.2	2.2	150	350	80	595	W120MT3.2	WM6
120*	2	5	3.5	150	350	80	795	W120MT5	WM9
120*	2	7.6	5.3	150	350	80	995	W120GT7.6	WG7
125*	2	3.1	2.2	150	350	80	595	W125MT3.1	WM6
125*	2	4.8	3.4	150	350	80	795	W125MT4.8	WM9
125*	2	7.3	5.1	150	350	80	995	W125GT7.3	WG7

\*Not U.L. recognized when this catalog was published.







# Gold Box UNREGULATED

AC-DC single output & wide adjust output

- Shipped Within 3 Days
- U.L. Recognized
- Five Year Warranty



**Low-cost DC power** suitable for driving loads such as lamps, relays, and small motors is provided by these unregulated power supplies. All components are generously derated, insuring a long and trouble-free life; built-in fusing prevents damage due to prolonged

overloading or short circuits. Mechanically similar to the regulated supplies shown on pages 46 and 47, they are housed in extruded aluminum cases which can be mounted in any position. Many models are U.L. Recognized.

#### STANDARD FEATURES

- · Capacitive filtering
- Fused input
- May be used in series or parallel
- No derating or heat sinking required
- · Completely serviceable

#### **SPECIFICATIONS**

**Input Voltage:** 0-125 VAC, 50-400 Hz, single phase. **Output Voltage Adjustment:** Adjustable voltage models are provided with a built-in continuously adjustable autotransformer.

**Load Regulation:** The nominal output voltages of single output models, and the maximum rated output voltages for models with wide adjust outputs, are based on 115 VAC input with approximately one-half load. At no load, they will increase by approximately 10%. At full load, they will be reduced by approximately 10%.

**Line Regulation:** Output voltage change due to line change directly proportional to input change.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

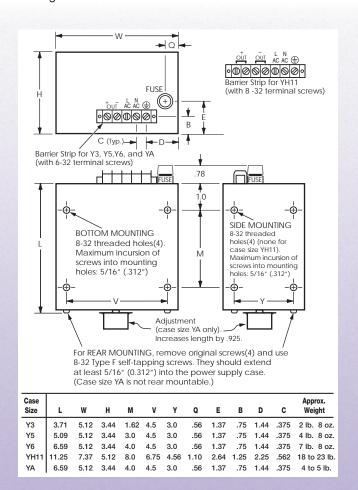
**Ambient Operating Temperature:** -10 to +65°C. No derating required.

Storage Temperature: -55 to +85°C.

#### **OPTIONS**

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** Provision for inputs of 0-250 VAC, 50-400 Hz, replacing the standard 0-125 VAC input voltage range, is available on single output models. To order, add suffix "-230" to model number and \$25.00 to price (for models in case size YH11 add \$40.00). The "-230" option requires two additional days.



**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **SINGLE OUTPUT**

Nominal Output Voltage	Output Current Amps.	Output Voltage N/L-F/L	Ripple Volts RMS	(\$) Price	Model	Case Size
4	.200	4.4 to 3.6	.2	\$90	U4Y20	Y3
5	10.0 (@ 5.0)	6.7 to 3.6 (5.0)	1.8 (1.3)	\$135	U5Y1000	Y6
6 6	2.0 5.0	7.7 to 4.8 7.5 to 5.0	2.0 1.8	\$90 \$135	U6Y200 U6Y500	Y3 Y5
7	8.0	8.0 to 5.4	1.5	\$135	U7Y800	Y6
9	10.0 (@ 5.0)	11.5 to 7.5 (9.0)	2.3 (1.3)	\$135	U9Y1000	Y6
10	10.0 (@ 5.0)	12.4 to 8.0 (9.8)	2.3 (1.3)	\$135	U10Y1000	Y6
12 12 12	1.5 5.0 10.0 (@ 5.0)	14.9 to 10.9 14.8 to 10.5 14.1 to 9.8 (11.5)	2.5 1.8 2.3 (1.3)	\$90 \$125 \$140	U12Y150 U12Y500 U12Y1000	Y3 Y5 Y6
14 14	1.0 10.0 (@ 5.0)	15.4 to 12.6 16.4 to 12.1 (14.0)	.7 2.3 (1.3)	\$90 \$140	U14Y100 U14Y1000	Y3 Y6
15	10.0 (@ 5.0)	17.2 to 12.8 (14.5)	2.3 (1.3)	\$140	U15Y1000	Y6
16 16	1.0 10.0 (@ 5.0)	17.6 to 14.4 18.8 to 14.2 (16.0)	.7 2.3 (1.3)	\$90 \$140	U16Y100 U16Y1000	Y3 Y6
18 18	1.0 10.0 (@ 5.0)	19.8 to 16.2 21.0 to 15.8 (18.0)	.7 2.4 (1.4)	\$90 \$140	U18Y100 U18Y1000	Y3 Y6
20 20	4.0 10.0 (@ 5.0)	22.0 to 17.5 23.7 to 18.3 (20.4)	2.0 2.4 (1.4)	\$125 \$140	U20Y400 U20Y1000	Y5 Y6
24 24 24 24 24 24 24	1.0 3.5 5.0 10.0 17.0 23.0	26.4 to 21.6 26.0 to 21.0 26.5 to 21.0 26.8 to 21.4 26.4 to 21.6 27.0 to 21.0	1.7 2.0 2.5 2.4 1.5 1.5	\$90 \$125 \$140 \$170 \$295 \$325	U24Y100 U24Y350 U24Y500 U24Y1000 U24Y1700 U24Y2300	Y3 Y5 Y6 Y6 YH11 YH11
25	5.0	28.1 to 22.3	2.5	\$140	U25Y500	Y6
27	5.0	30.0 to 24.0	2.6	\$140	U27Y500	Y6
28 28 28 28 28 28 28	1.0 3.0 5.0 8.0 15.0 20.0	30.8 to 25.2 30.8 to 26.0 31.2 to 24.8 30.2 to 25.0 30.8 to 25.2 30.4 to 24.5	1.7 2.0 2.6 2.4 1.5 1.5	\$90 \$125 \$140 \$170 \$295 \$325	U28Y100 U28Y300 U28Y500 U28Y800 U28Y1500 U28Y2000	Y3 Y5 Y6 Y6 YH11 YH11
30	2.0	33.0 to 27.0	1.5	\$120	U30Y200	Y5
32 32	.400 5.0	35.2 to 28.8 35.5 to 28.0	.6 3.3	\$90 \$145	U32Y40 U32Y500	Y3 Y6
35	5.0	38.0 to 30.0	3.3	\$145	U35Y500	Y6
37	5.0	40.5 to 32.2	3.3	\$145	U37Y500	Y6
38	5.0	43.0 to 34.0	3.3	\$145	U38Y500	Y6
40 40 40	1.0 2.0 5.0	44.0 to 36.0 44.0 to 36.0 45.0 to 37.0	1.6 1.5 3.3	\$100 \$125 \$145	40UY100 U40Y200 U40Y500	Y3 Y5 Y6

41         .400         45.1 to 36.9         .6         \$90         U41Y40           42         5.0         48.0 to 36.0         6.5         \$145         U42Y500           44         2.0         48.4 to 39.6         1.5         \$125         U44Y200           45         1.0         49.5 to 40.5         1.6         \$110         45UY100           45         5.0         51.0 to 38.5         6.5         \$145         U45Y500           48         .400         52.8 to 43.2         .6         \$95         U48Y40           50         1.0         55 to 45         1.6         \$110         50UY100           52         .400         57.2 to 46.8         .6         \$100         U52Y40           55         .250         60.5 to 49.5         .4         \$95         U55Y25	Y3 Y6 Y5 Y3 Y6 Y3 Y6 Y3 Y3 Y3 Y3 Y3 Y5 Y3
44         2.0         48.4 to 39.6         1.5         \$125         U44Y200           45         1.0         49.5 to 40.5         1.6         \$110         45UY100           45         5.0         51.0 to 38.5         6.5         \$145         U45Y500           48         .400         52.8 to 43.2         .6         \$95         U48Y40           50         1.0         55 to 45         1.6         \$110         50UY100           52         .400         57.2 to 46.8         .6         \$100         U52Y40	Y5 Y3 Y6 Y3 Y3 Y3 Y3 Y5
45 1.0 49.5 to 40.5 1.6 \$110 45UY100 45 5.0 51.0 to 38.5 6.5 \$145 U45Y500 48 .400 52.8 to 43.2 .6 \$95 U48Y40 50 1.0 55 to 45 1.6 \$110 50UY100 52 .400 57.2 to 46.8 .6 \$100 U52Y40	Y3 Y6 Y3 Y3 Y3 Y3 Y5
45         5.0         51.0 to 38.5         6.5         \$145         U45Y500           48         .400         52.8 to 43.2         .6         \$95         U48Y40           50         1.0         55 to 45         1.6         \$110         50UY100           52         .400         57.2 to 46.8         .6         \$100         U52Y40	Y6 Y3 Y3 Y3 Y3 Y3 Y5
48     .400     52.8 to 43.2     .6     \$95     U48Y40       50     1.0     55 to 45     1.6     \$110     50UY100       52     .400     57.2 to 46.8     .6     \$100     U52Y40	Y3 Y3 Y3 Y3 Y5
50         1.0         55 to 45         1.6         \$110         50UY100           52         .400         57.2 to 46.8         .6         \$100         U52Y40	Y3 Y3 Y3 Y5
52 .400 57.2 to 46.8 .6 \$100 U52Y40	Y3 Y3 Y5
	Y3 Y5
1 35 .250   00.5 10 49.5   .4   \$95   055125	Y5
60 1.0 65.3 to 53.0 2.8 \$120 U60Y100	_
62 .400 69.0 to 58.0 1.5 \$100 U62Y40	
80 .300 88.0 to 72.0 1.0 \$100 U80Y30	Y3
90 .400 99.0 to 81.0 2.2 \$100 U90Y40	Y3
95 .150 105 to 85 1.1 \$100 U95Y15	Y3
100 .200 110 to 93 1.0 \$100 U100Y20	Y3
110 .200 121 to 100 1.0 \$100 U110Y20	Y3
120 .200 132 to 110 1.0 \$100 U120Y20	Y3
140 .200 154 to 126 1.7 \$110 U140Y20	Y3
150 .200 165 to 135 1.7 \$110 U150Y20	Y3
165 .200 176 to 144 1.7 \$110 U165Y20	Y3
170 .200 187 to 153 2.0 \$110 U170Y20	Y3
180 .200 190 to 162 2.0 \$110 U180Y20	Y3
200 .200 220 to 180 2.0 \$115 U200Y20	Y3
250 .200 275 to 225 4.0 \$115 250UY20	Y3
275 .100 303 to 247 3.0 \$110 U275Y10 275 .200 303 to 247 4.0 \$120 U275Y20	Y3 Y5
275 .200 303 to 247 4.0 \$120 U275Y20 300 .200 330 to 270 5.0 \$120 U300Y20	Y5
	Y5
325 .200 360 to 295 6.0 \$120 U325Y20 340 .100 374 to 306 3.0 \$110 U340Y10	Y3
360 .100 396 to 324 3.0 \$110 U360Y10	Y3
370 .100 407 to 333 3.0 \$110 U370Y10	Y3
400 .200 440 to 360 6.0 \$125 U400Y20	Y5
420 .100 462 to 378 6.7 \$110 U420Y10	Y3
475 .020 523 to 426 3.1 \$110 U475Y02	Y3
500 .200 550 to 450 9.1 \$135 U500Y20	Y5
550* .100 605 to 495 4.8 \$135 U550Y10	Y5
580* .020 638 to 522 3.1 \$110 U580Y02	Y3
600* .100 660 to 540 10.0 \$140 U600Y10	Y5
750* .020 825 to 675 3.1 \$110 U750Y02	Y3
800* .100 880 to 720 13.0 \$140 U800Y10	Y5
900* .020 990 to 810 5.0 \$115 U900Y02 900* .100 990 to 810 13.0 \$140 U900Y10	Y3 Y5
1000* .100 1100 to 900 13.0 \$140 U1000Y10	Y5

<sup>\*</sup>Not U.L. recognized when this catalog was published.

#### **WIDE ADJUST OUTPUT**

					FIELD AND
Output Voltage Range	Output Current Amps.	Ripple Volts RMS	(\$) Price	Model	Case Size
0-8*	2.0	2	\$240	U8YA200	YA
0-15*	1.5	2.5	\$240	U15YA150	YA
0-54*	1.0	1.6	\$240	U54YA100	YA
0-95*	.300	2.2	\$240	U95YA30	YA
0-125*	.200	1.5	\$240	U125YA20	YA
0-220*	.200	2	\$240	U220YA20	YA
0-260*	.200	4	\$240	U260YA20	YA
0-370*	.100	3	\$240	U370YA10	YA
0-450*	.100	6.7	\$240	U450YA10	YA
0-800*	.020	3.1	\$240	U800YA02	YA
0-950*	.020	5	\$240	U950YA02	YA

<sup>\*</sup>Not U.L. recognized when this catalog was published.



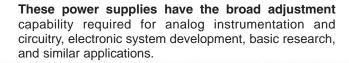


# Gold Box & Narrow Profile WIDE ADJUST OUTPUT

LINEAR REGULATED AC-DC

(fixed & adjustable current limiting)

- Shipped Within 3 Days
- All models U.L. Recognized
- **(€** (Gold Box models)
- Five Year Warranty





Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Regulation, Ripple (in constant voltage mode):

Line Regulation:  $\pm 0.005\%$  or 2 mV, whichever is greater. Load Regulation:  $\pm 0.005\%$  or 2 mV, whichever is greater. Ripple: 0.25 mV rms.

Regulation, Ripple (in constant current mode):

Line Regulation: ±0.1% or 2 mA. Load Regulation: ±0.2% or 5 mA.

Ripple: 0.1% rms.

**Remote Voltage Sensing:** Provision for sensing the output voltage across the load, to compensate voltage drops in output wiring, is a standard feature.

**Remote Voltage Programming:** The output voltage of all models may be controlled by means of external resistance connected in series with the -S lead.

Voltage Programming Coefficient: See table.

Calibration tolerance, ±2%.

**Current Limiting:** Models with fixed current limiting have a rolloff characteristic with automatic recovery. All others have current limiting with a constant-voltage/constant-current crossover characteristic.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

**Temperature Coefficient (in constant voltage mode):** 0.015%/°C (Typical).

**Ambient Operating Temperature:** –20 to +71°C.

Storage Temperature: -55 to +85°C.



For applications requiring a constant current or adjustable current limiting, a power supply with a true constant-current characteristic, such as those with model numbers beginning with the letter P, should be used.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

Remote Current Limiting Adjustment: All models having numbers beginning with the letter P have a built-in (front panel) current limit control. Provision for control of the current limit setting by adjustment of an external resistance is available as an option. To order, add the prefix letter "E" to the model number, and add \$10.00 to the standard price.

The current limit setting is inversely related to resistance. Use a 200 ohm,  $\frac{1}{2}$  W potentiometer.

**Overvoltage Protection:** An internally mounted overvoltage protection circuit, set approximately 20% above the maximum output voltage rating of the supply, is available on all models. To order, add prefix "V" to the model number, and increase standard price as follows:

Maximum output of6-60V	100-150V
All case sizes except H16\$25.00	\$35.00
Case size H16	85.00

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$25.00 to price. (For models in case sizes H11 and H16, add \$40.00.) The "-230" option requires two additional days.

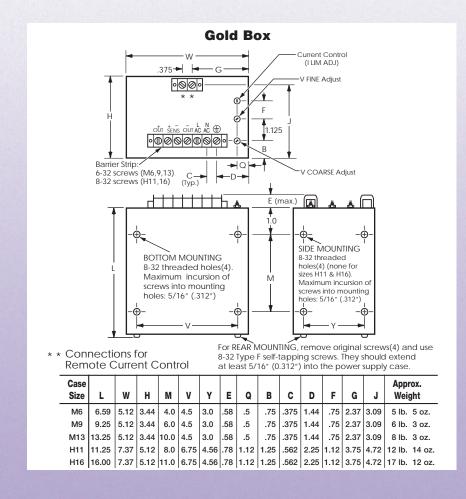
#### **GOLD BOX MODELS**

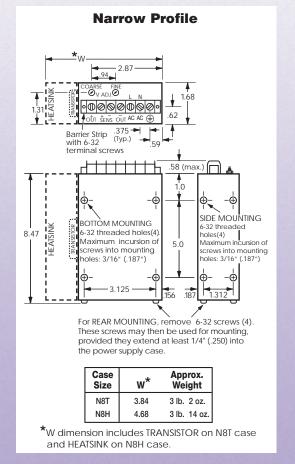
Output Voltage		put Cur mps. at		Voltage Prgmg. Coeff.	Case			Voltage Progra Adjust. Current	mmable Limiting
Range	40°C	55°C	71°C	(Ω/V)	Size	Model	Price (\$)	Model	Price (\$)
0-6 0-6 0-6 0-6 0-6 0-6	1.2 2.0 3.0 5.0 8.0 12.0 16.0	1.2 2.0 2.5 4.0 7.0 10.0 13.0	1.2 2.0 2.0 3.0 6.0 7.0	820 820 820 820 820 820 820	M6 M6 M9 M13 H11 H16	A06MX120 A06MX200 A06MX300 A06MX500 A06MX800 A06HX1200 A06HX1600	\$195 \$225 \$255 \$305 \$355 \$440 \$515	P06MX120 P06MX200 P06MX300 P06MX500 P06MX800 P06HX1200 P06HX1600	\$225 \$245 \$280 \$335 \$375 \$460 \$535
0-15 0-15 0-15 0-15 0-15 0-15	1.0 2.0 3.0 5.0 8.0 10.0	1.0 1.6 2.4 4.0 6.0 8.0	1.0 1.2 1.8 2.5 4.0 6.0	330 330 330 330 330 330 330	M6 M6 M9 M13 H11 H16	A015MX100 A015MX200 A015MX300 A015MX500 A015HX800 A015HX1000	\$185 \$245 \$305 \$355 \$455 \$515	P015MX100 P015MX200 P015MX300 P015MX500 P015HX800 P015HX1000	\$205 \$270 \$335 \$375 \$475 \$535
0-30 0-30 0-30 0-30 0-30 0-30	.50 1.0 1.6 2.5 4.0 5.0	.50 1.0 1.4 2.0 3.0 4.0	.50 1.0 1.2 1.5 2.0 3.0	160 160 160 160 160 160	M6 M6 M9 M13 H11 H16	A030MX50 A030MX100 A030MX160 A030MX250 A030HX400 A030HX500	\$205 \$245 \$290 \$350 \$465 \$530	P030MX50 P030MX100 P030MX160 P030MX250 P030HX400 P030HX500	\$235 \$270 \$310 \$370 \$485 \$550
0-50 0-50 0-50 0-50 0-50 0-50	.35 .60 .85 1.2 2.4 3.0	.34 .50 .75 .96 1.9 2.4	.33 .40 .65 .72 1.4 1.8	1000 1000 1000 1000 1000 1000	M6 M6 M9 M13 H11 H16	A050MX35 A050MX60 A050MX85 A050MX120 A050HX240 A050HX300	\$235 \$290 \$340 \$395 \$510 \$590	P050MX35 P050MX60 P050MX85 P050MX120 P050HX240 P050HX300	\$255 \$310 \$360 \$420 \$535 \$620
0-100 0-100 0-100 0-100 0-100 0-100	.10 .25 .45 .60 1.2 1.5	.09 .20 .36 .48 .96	.08 .15 .27 .36 .72 .90	500 500 500 500 500 500	M6 M6 M9 M13 H11 H16	A0100MX10 A0100MX25 A0100MX45 A0100MX60 A0100HX120 A0100HX150	\$290 \$340 \$385 \$440 \$555 \$635	P0100MX10 P0100MX25 P0100MX45 P0100MX60 P0100HX120 P0100HX150	\$310 \$360 \$410 \$465 \$580 \$660

### NARROW PROFILE MODELS (for limited space applications)

Output Voltage Range	Output Current Amps. (to +71°C)	Voltage Prgmg. Coeff. $(\Omega/V)$	Case Size	Model	(\$) Price
0-7*	1.0	700	N8T	A07XN100	\$185
0-7*	2.1	700	N8H	A07NX210	\$230
0-18*	.400	270	N8T	A018XN40	\$180
0-18*	1.0	270	N8H	A018NX100	\$215
0-32*	.250	150	N8T	A032XN25	\$160
0-32*	.600	150	N8H	A032NX60	\$215
0-60*	.125	820	N8T	A060NX12	\$190
0-60*	.250	820	N8H	A060NX25	\$240
0-150*	.050	330	N8T	A0150NX05	\$230
0-150*	.100	330	N8H	A0150NX10	\$275

<sup>\*</sup> Not CE certified.





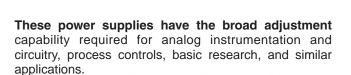


#### Gold Box & Rack Mounting

# WIDE ADJUST OUTPUT PROGRAMMABLE (with a control voltage or a potentiometer)

LINEAR REGULATED AC-DC

- Shipped Within 3 Days (Gold Box models)
- Shipped Within 9 Days (Rack models)
- Five Year Warranty



#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Regulation, Ripple:

Line Regulation: ±0.005% or 2 mV, whichever is greater. Load Regulation: ±0.005% or 2 mV, whichever is greater. Ripple: 0.25 mV rms.

**Remote Voltage Sensing:** Provision for sensing the output voltage across the load, to compensate voltage drops in output wiring, is a standard feature.

**Controls:** Coarse and fine voltage adjustments are located on the front panel of Gold Box models and on the rear panel of Rack Mounting models.

#### **Output Voltage Programming:**

With a Control Voltage: The output voltage may be programmed from 0 to full rating by means of control voltage inputs of 0 to +10Vdc. Linearity, 1%. Contact factory for information on other input ranges.

**With a Potentiometer:** The output voltage may be programmed by means of a remotely located 5K potentiometer.

**Current Limiting:** Rolloff characteristic with automatic recovery.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground. When using a control voltage input, its negative side must be connected to the -S (sense) terminal.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** -20 to +71°C.

Storage Temperature: -55 to +85°C.

**Mounting (Gold Box models):** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.



The output voltage may be manually controlled either at the power supply or remotely, or it may be programmed with the analog output from a PLC or digital-to-analog converter.

#### **OPTIONS**

**Overvoltage Protection:** An internally mounted overvoltage protection circuit, set approximately 20% above the maximum output voltage rating of the supply, is available on all models. To order, add prefix "V" to the model number, and increase standard price as follows:

Maximum output of	6-50V	100V
Case size M6	\$25.00	\$35.00
Case size M9	25.00	35.00
Case size M13	25.00	35.00
Case size H11	25.00	35.00
Case size H16	75.00	85.00
Case size 3P11	35.00	45.00
Case size 5P12	35.00	45.00
Case size 3P17	35.00	
Case size 5P17	85.00	

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$40.00 to price. (For models in case sizes M6, M9 and M13, add \$25.00.) The "-230" option requires two additional days.

**Ammeter (Rack Mounting models):** Add suffix "A" to model number and \$60.00 to price.

**Voltmeter (Rack Mounting models):** Add suffix "F" to model number and \$60.00 to price.

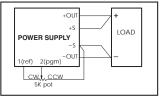
**Handles (Rack Mounting models):** Add suffix "H" to model number and \$30.00 to price.

Front Panel Controls (Rack Mounting models): For voltage controls (coarse and fine) mounted on the front panel, instead of the standard screwdriver-slot adjustments at the rear, add suffix "P" to the model number and \$25.00 to price.

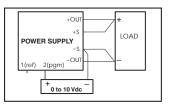


#### **GOLD BOX MODELS**

GOLD	DU2	Z IVI C	.3			
Output Voltage	A	out Cur mps. at		Case		
Range	40°C	55°C	71°C	Size	Model	Price (\$)
0-6 0-6 0-6 0-6 0-6 0-6	1.2 2.0 3.0 5.0 8.0 12.0 16.0	1.2 2.0 2.5 4.0 7.0 10.0 13.0	1.2 2.0 2.0 3.0 6.0 7.0 10.0	M6 M6 M6 M9 M13 H11 H16	Y06MX120 Y06MX200 Y06MX300 Y06MX500 Y06MX800 Y06HX1200 Y06HX1600	245 265 300 355 395 480 555
0-15 0-15 0-15 0-15 0-15 0-15	1.0 2.0 3.0 5.0 8.0 10.0	1.0 1.6 2.4 4.0 6.0 8.0	1.0 1.2 1.8 2.5 4.0 6.0	M6 M6 M9 M13 H11 H16	Y015MX100 Y015MX200 Y015MX300 Y015MX500 Y015HX800 Y015HX1000	225 290 355 395 495 555
0-30 0-30 0-30 0-30 0-30 0-30	.50 1.0 1.6 2.5 4.0 5.0	.50 1.0 1.4 2.0 3.0 4.0	.50 1.0 1.2 1.5 2.0 3.0	M6 M6 M9 M13 H11 H16	Y030MX50 Y030MX100 Y030MX160 Y030MX250 Y030HX400 Y030HX500	255 290 330 390 505 570
0-50 0-50 0-50 0-50 0-50 0-50	.35 .60 .85 1.2 2.4 3.0	.34 .50 .75 .96 1.9 2.4	.33 .40 .65 .72 1.4 1.8	M6 M6 M9 M13 H11 H16	Y050MX35 Y050MX60 Y050MX85 Y050MX120 Y050HX240 Y050HX300	275 330 380 445 560 645
0-100 0-100 0-100 0-100 0-100 0-100	.10 .25 .45 .60 1.2 1.5	.09 .20 .36 .48 .96	.08 .15 .27 .36 .72	M6 M6 M9 M13 H11 H16	Y0100MX10 Y0100MX25 Y0100MX45 Y0100MX60 Y0100HX120 Y0100HX150	330 380 435 490 605 685



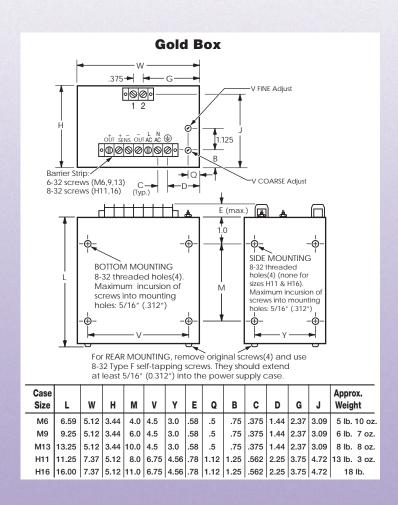
Programming with a Potentiometer

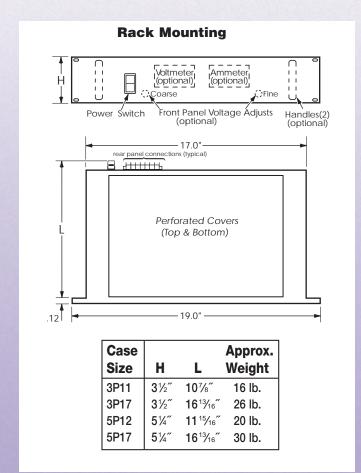


Programming with a Control Voltage

#### **RACK MOUNTING MODELS**

Output Voltage	A	Output Currer Amps. at		Case		
Range	40°C	55°C	71°C	Size	Model	Price (\$)
0-6	10.0	8.0	6.0	3P11	Y06PX10	600
0-6	16.0	12.8	9.6	5P12	Y06PX16	720
0-6	23.0	18.4	13.8	3P17	Y06PX23	875
0-6	30.0	24.0	18.0	5P17	Y06PX30	1010
0-15	7.0	5.6	4.2	3P11	Y015PX7	600
0-15	10.0	8.0	6.0	5P12	Y015PX10	720
0-15	13.0	10.4	7.8	3P17	Y015PX13	875
0-30 0-30 0-30 0-30	0 4.0 3.2 0 5.0 4.0 0 7.0 5.6		2.4 3.0 4.2 5.4	3P11 5P12 3P17 5P17	Y030PX4 Y030PX5 Y030PX7 Y030PX9	600 720 875 1010
0-50	2.4	1.9	1.5	3P11	Y050PX2	600
0-50	3.0	2.4	1.8	5P12	Y050PX3	720
0-50	5.0	4.0	3.0	5P17	Y050PX5	1010
0-100	1.2	.9	.7	3P11	Y0100PX1.2	655
0-100	1.5	1.2	.9	5P12	Y0100PX1.5	825







# Gold Box & Narrow Profile DUAL TRACKING OUTPUTS

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- **(€** (Gold Box models)
- Five Year Warranty



Narrow Profile

Gold Box

These dual output power supplies are a convenient source of the tracking voltages required for powering operational amplifiers and related circuits. Their positive/common/negative output terminal configuration

**SPECIFICATIONS** 

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Voltages: Tracking within 1%.

Load Regulation: ±0.1%. Line Regulation: ±0.1%. Ripple: 1.5 mV rms.

Polarity: Positive output, common, and negative output.

Remote Voltage Sensing: Standard.

Overload/Short Circuit Protection: Electronic current

limiting.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** -10 to +71°C.

Storage Temperature: -55 to +85°C.

**Dimensions:** See page 63 for case dimensions.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### OPTIONS

**Overvoltage Protection:** A built-in preset overvoltage protection circuit is available on all models. If either output fails, both outputs are 'crowbarred'. To order, add prefix "V" to the model number, and increase standard price by \$30.00.

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$25.00 to price. The "-230" option requires two additional days.

minimizes system wiring. Provision for remote sensing permits compensation of load line effects. Although moderately priced, they are sturdily constructed and conservatively rated.

#### **GOLD BOX MODELS**

Nominal Output	Adjust Range	Amps	. per Out	put at	(\$)		Case
Voltages		40°C	55°C	71°C	Price	Model	Size
±5 ±5 ±5	.5 .5 .5	.750 1.5 2.5	.650 1.25 2.0	.550 1.0 1.5	\$230 \$270 \$325	TD5-75 TD5-150 TD5-250	TG5 TG6 TG9
±12 ±12 ±12 ±12 ±12	1 1 1 .5	1.0 1.6 2.5 4.5 8.5	.900 1.4 2.0 3.7 7.0	.800 1.0 1.5 3.0 5.5	\$235 \$275 \$325 \$390 \$495	TD12-100 TD12-160 TD12-250 TD12-450 TD12-850	TG5 TG6 TG9 TG13 TH11
±15 ±15 ±15 ±15 ±15 ±15	1 1 1 1 .5	.400 1.0 1.6 2.5 4.5 8.5	.400 .900 1.4 2.0 3.7 7.0	.400 .800 1.0 1.5 3.0 5.5	\$180 \$235 \$275 \$325 \$390 \$495	TD15-40 TD15-100 TD15-160 TD15-250 TD15-450 TD15-850	TG5 TG5 TG6 TG9 TG13 TH11

#### FRONT COVER CONNECTIONS:

(See page 63 for complete drawing.)

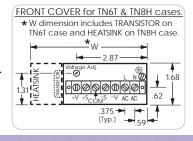


## NARROW PROFILE MODELS (for limited space applications)

Nominal Output	Adjust Range	Amps	. per Output at		(\$)		Case
Voltages	± V	40°C	55°C	71°C	Price	Model	Size
±12*	1	.500	.500	.400	\$195	FD12-50A	TN6T
±12*	.5	1.0	.900	.800	\$260	LD12-100	TN8H
±15*	1	.500	.500	.400	\$195	FD15-50A	TN6T
±15*	.5	1.0	.900	.800	\$260	LD15-100	TN8H

<sup>\*</sup> Not CE certified.

See page 63 for complete drawing.





# Gold Box **DUAL ISOLATED OUTPUTS**(User-selectable)

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- Five Year Warranty

Acopian general purpose duals furnish two completely independent outputs, either identical or different, in less space and at less cost than two equivalent single output supplies. Thousands of output voltage/current rating combinations are available. Mounting and system wiring are simplified. Quality components, generously derated, insure long-term reliability.

**Dual Tracking & Dual Isolated Case Sizes:** 



#### (on page 63) (on page 62) **→**0→ FUSE: Case size G5D only Voltage Adjust ———— (Sec 1 Adj on G5D case For BOTTOM & SIDE MOUNTING Maximum incursion of screws into mounting holes: Barrier Strip 5/16" (.312"). 3/16" (.187") for TN6T .375 with 6-32 terminal screws and TN8H cases. .78 .0 SIDE MOUNTING BOTTOM MOUNTING 8-32 threaded holes(4) 8-32 threaded holes(4). (6-32 for TN6T and M (6-32 for TN6T and TN8H cases. TN8H cases.) Not on TH11 case.

For REAR MOUNTING of TG5,6,9 &13, TH11, and G5D cases, remove original screws(4) and use 8-32 Type F self-tapping screws. They should extend at least 5/16" (0.312") into the power supply case.

(When rear mounting G5D case, a hole is required in the mounting

1.25

surface for access to the Section 2 output adjustment.)

(Sec 2 Adj on G5D case

For REAR MOUNTING of TN6T and TN8H cases, remove original 6-32 screws(4). These screws may then be used for mounting, provided they extend at least 1/4" (0.250") into the power supply case.

Case Size	L	w	н	М	V	Υ	Е	Q	В	D	т	Approx. Weight
G5D	5.09	5.12	3.44	3.0	4.50	3.0	.75	1.25	2.73	1.44	.31	4 lb.
TG5	5.09	5.12	3.44	3.0	4.50	3.0	.75	1.25	2.73	1.44	.31	3 lb. 4 oz.
TG6	6.59	5.12	3.44	4.0	4.50	3.0	.75	1.25	2.73	1.44	.31	4 lb. 4 oz.
TG9	9.25	5.12	3.44	6.0	4.50	3.0	.75	1.25	2.73	1.44	.31	6 lb. 8 oz.
TG13	13.25	5.12	3.44	10.0	4.50	3.0	.75	1.25	2.73	1.44	.31	12 lb.
TH11	11.25	7.37	5.12	8.0	6.75	4.56	.75	2.73	4.36	2.38	.31	18 lb. 4 oz.
TN6T	6.59	3.84	r	4.0	3.12	1.31					.156	2 lb. 4 oz.
TN8H	8.47	4.68	t .	5.0	3.12	1.31					.156	3 lb. 14 oz.

\* see page 62 for front cover drawing.

**HOW TO ORDER:** Select two **sections** (from the same table) on pages 64 and 65. The complete model number is the combination of the two **sections** selected. Example: The combination of section 5GT20D and section 8GT50D is Model 5GT20D-8GT50D. Always assign the lower voltage section first. (Two of the same section can also be selected.) For pricing purposes, add the costs of the individual sections selected.

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Specifications: See pages 64 and 65.

**Short Circuit Protection:** Delivers current surges without damage—built-in fuse protects supply against prolonged overloads and shorts.

**Polarity:** Outputs are floating. Each output may be independently connected to provide any combination of positive and negative voltages. Outputs may be floated up to 300 volts above ground.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** -10 to +71°C. No derating required.

Storage Temperature: -55 to +85°C.

Case size: G5D.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

**Overvoltage Protection:** Two separate, preset overvoltage protection circuits, one for each output. To order, add prefix "V" to model number and add \$30.00 to the standard price for 1.5 to 70 volt outputs; add \$50.00 if either or both outputs are greater than 70 volts.

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "–230" to model number and \$25.00 to the standard price. The "–230" option requires two additional days.



### **DUAL OUTPUT (User-selectable)**

#### \_\_\_\_ (OUTPUTS TO 500 MA) \_\_\_\_\_

Output Voltage         £ V         Load Line Amps.         mV Section (Section)         Section (Section)           1.5         5         2.00         .4         .05         1         \$100         1.5GT20D           1.5         .5         .200         .4         .05         1         \$110         1.5GT40D           2.5         .5         .400         .5         .1         1         \$110         2.5GT20D           3         .5         .200         .3         .05         .1         \$110         2.5GT20D           3         .5         .200         .2         .05         .1         \$110         3.3GT20D           3.3         .5         .400         .3         .1         .1         \$110         3.3GT20D           3.3         .5         .200         .2         .05         .1         \$100	Nominal	Adiust	Output	Regul	ation	Ripple	(see 'How	to Order')
1.5   .5   .200   .4   .05   1   \$100   1.5GT20D	Output	Range	Current					Section
1.5			<u> </u>			_	. ,	
2.5   .5   .200								
2.5					_	1		
3			.400	.5	.1	1	\$110	2.5GT40D
3.3   .5   .200   .2   .05   1   \$100   3.3GT20D								
3.3   .5				_	_			
5         .5         .200         .2         .05         1         \$100         \$5GT20D           5         .5         .500         .3         .05         1         \$110         \$5GT50D           6         1         .200         .05         .05         1         \$110         \$6GT50D           6         1         .500         .15         .05         1         \$110         \$6GT20D           7         1         .200         .05         .05         1         \$110         \$7GT20D           7         1         .500         .15         .05         1         \$110         \$8GT50D           8         1         .200         .05         .05         1         \$110         \$8GT20D           9         1         .200         .05         .05         1         \$100         \$8GT20D           9         1         .200         .05         .05         1         \$100         \$9GT20D           9         1         .200         .05         .05         1         \$100         \$9GT20D           10         1         .200         .05         .05         1         \$100         \$100								
5         .5         .500         .3         .05         1         \$110         5GT50D           6         1         .200         .05         .05         1         \$100         GGT20D           6         1         .500         .15         .05         1         \$110         GGT50D           7         1         .500         .15         .05         1         \$100         7GT20D           8         1         .200         .05         .05         1         \$100         8GT20D           8         1         .200         .05         .05         1         \$100         9GT20D           9         1         .200         .05         .05         1         \$100         10GT25D           10         1         .50         .1         .100         1         .100         10GT25D </td <td>5</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td>-</td> <td></td>	5			_	_		-	
6         1         .500         .15         .05         1         \$110         6GT50D           7         1         .200         .05         .05         1         \$1100         7GT20D           7         1         .500         .15         .05         1         \$1100         8GT20D           8         1         .500         .1         .05         1         \$110         8GT20D           8         1         .500         .1         .05         1         \$110         8GT20D           9         1         .500         .1         .05         1         \$110         9GT20D           9         1         .500         .1         .05         1         \$110         10GT55D           10         1         .500         .1         .05         1         \$110         10GT25D           10         1         .500         .1         .05         1         \$110         10GT25D           10         1         .500         .1         .05         1         \$110         11GT55D           11         1         .250         .05         .05         1         \$110         12GT25D						1	\$110	
7 1 200 .05 .05 1 \$100 7GT20D 7 1 .500 .15 .06 1 \$110 7GT50D 8 1 .200 .05 .05 1 \$100 8GT20D 9 1 .500 .1 .05 1 \$110 9GT50D 9 1 .500 .1 .05 1 \$110 9GT50D 10 1 .250 .05 .05 1 \$100 10GT25D 10 1 .500 .1 .05 1 \$110 10GT50D 11 1 .250 .05 .05 1 \$100 10GT25D 11 1 .500 .1 .05 1 \$110 10GT50D 12 1 .250 .05 .05 1 \$100 11GT25D 12 1 .250 .05 .05 1 \$110 11GT50D 12 1 .500 .1 .05 1 \$110 12GT25D 13 1 .500 .1 .05 1 \$110 12GT25D 13 1 .500 .1 .05 1 \$110 12GT25D 13 1 .500 .1 .05 1 \$110 12GT50D 15 1 .250 .05 .05 1 \$100 12GT25D 16 1 .250 .05 .05 1 \$110 12GT25D 17 1 .250 .05 .05 1 \$100 12GT25D 18 1 .500 .1 .05 1 \$110 12GT25D 16 1 .250 .05 .05 1 \$100 12GT25D 17 1 .250 .05 .05 1 \$100 15GT25D 18 1 .500 .1 .05 1 \$110 12GT25D 17 1 .250 .05 .05 1 \$100 15GT25D 18 1 .500 .1 .05 1 \$110 12GT25D 17 1 .500 .1 .05 1 \$110 12GT25D 18 1 .250 .05 .05 .05 1 \$100 15GT25D 17 1 .250 .05 .05 .05 1 \$100 15GT25D 18 1 .500 .1 .05 1 \$110 12GT25D 17 1 .500 .1 .05 1 \$110 12GT25D 18 1 .250 .05 .05 .05 1 \$100 12GT25D 19 1 .500 .1 .05 1 \$110 12GT25D 20 1 .250 .05 .05 .05 1 \$100 12GT25D 20 1 .250 .05 .05 .05 1 \$100 12GT25D 20 1 .250 .05 .05 .05 1 \$100 12GT25D 20 1 .250 .05 .05 .05 1 \$100 22GT25D 22 1 .250 .05 .05 .05 1 \$110 22GT50D 24 1 .250 .05 .05 .05 1 \$110 22GT50D 25 1 .500 .1 .05 1 \$110 22GT50D 26 1 .250 .05 .05 .05 1 \$100 22GT25D 26 1 .250 .05 .05 .05 1 \$100 22GT25D 27 1 .500 .1 .05 1 \$110 22GT50D 28 1 .250 .05 .05 .05 1 \$100 22GT25D 26 1 .250 .05 .05 .05 1 \$100 22GT25D 26 1 .250 .05 .05 .05 1 \$100 22GT25D 27 1 .500 .1 .05 1 \$110 22GT50D 28 1 .250 .05 .05 .05 1 \$110 22GT50D 29 1 .250 .05 .05 .05 1 \$110 22GT50D 20 1 .250 .05 .05 .05 1 \$110 22GT50D 21 1 .250 .05 .05 .05 1 \$110 22GT50D 22 1 .250 .05 .05 .05 1 \$110 22GT50D 23 1 .500 .1 .05 .1 \$110 22GT50D 24 1 .250 .05 .05 .05 1 \$110 22GT50D 25 1 .500 .05 .05 1 \$100 22GT25D 26 1 .250 .05 .05 .05 1 \$110 22GT50D 27 1 .500 .1 .05								
7         1         .500         .15         .05         1         \$110         7GT50D           8         1         .200         .05         .05         1         \$100         8GT20D           8         1         .500         .1         .05         1         \$110         8GT50D           9         1         .500         .1         .05         1         \$110         9GT50D           10         1         .250         .05         .05         1         \$110         10GT50D           10         1         .250         .05         .05         1         \$110         10GT50D           11         1         .250         .05         .05         1         \$110         11GT50D           11         1         .250         .05         .05         1         \$100         11GT50D           11         1         .250         .05         .05         1         \$100         11GT50D           12         1         .250         .05         .05         1         \$100         12GT25D           12         1         .250         .05         .05         1         \$110         13GT50D </td <td></td> <td>-</td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td>		-		_	_			
8         1         .200         .05         .05         1         \$100         8GT20D           8         1         .500         .1         .05         1         \$110         8GT50D           9         1         .200         .05         .05         1         \$100         9GT20D           9         1         .500         .1         .05         1         \$110         9GT50D           10         1         .500         .1         .05         1         \$110         10GT25D           10         1         .500         .1         .05         1         \$110         10GT25D           10         1         .500         .1         .05         1         \$110         10GT50D           11         1         .250         .05         .05         .1         \$110         11GT50D           12         1         .500         .1         .05         1         \$110         12GT55D           12         1         .500         .1         .05         1         \$100         13GT25D           13         1         .250         .05         .05         .1         \$100         13GT25D								
8         1         .500         .1         .05         1         \$110         8GT50D           9         1         .200         .05         .05         1         \$100         9GT20D           9         1         .500         .1         .05         1         \$110         9GT50D           10         1         .250         .05         .05         1         \$110         10GT50D           10         1         .500         .1         .05         1         \$110         10GT50D           11         1         .250         .05         .05         1         \$110         11GT50D           12         1         .250         .05         .05         1         \$110         12GT50D           12         1         .250         .05         .05         1         \$100         12GT50D           13         1         .250         .05         .05         1         \$100         12GT50D           13         1         .250         .05         .05         1         \$100         15GT25D           13         1         .250         .05         .05         1         \$100         15GT25D<				_	_		-	
9 1 .500 .1 .05 1 \$110 9GT50D 10 1 .250 .05 .05 1 \$100 10GT25D 11 1 .500 .1 .05 1 \$110 11GT25D 11 1 .250 .05 .05 .1 \$110 11GT25D 11 1 .500 .1 .05 1 \$110 11GT25D 11 1 .500 .1 .05 1 \$110 11GT50D 12 1 .250 .05 .05 .1 \$100 12GT25D 12 1 .500 .1 .05 1 \$110 12GT50D 13 1 .250 .05 .05 .1 \$100 12GT25D 13 1 .250 .05 .05 .1 \$100 13GT25D 15 1 .500 .1 .05 1 \$110 13GT50D 15 1 .500 .1 .05 1 \$110 13GT50D 16 1 .250 .05 .05 1 \$100 13GT25D 16 1 .250 .05 .05 1 \$100 13GT25D 16 1 .250 .05 .05 1 \$110 15GT25D 16 1 .500 .1 .05 1 \$110 15GT25D 16 1 .500 .1 .05 1 \$110 16GT50D 17 1 .250 .05 .05 1 \$100 16GT25D 18 1 .500 .1 .05 1 \$110 16GT50D 17 1 .500 .1 .05 1 \$110 16GT50D 18 1 .250 .05 .05 1 \$100 16GT25D 18 1 .250 .05 .05 .1 \$100 16GT25D 18 1 .250 .05 .05 1 \$100 16GT25D 18 1 .250 .05 .05 1 \$100 17GT25D 18 1 .250 .05 .05 1 \$110 17GT50D 18 1 .250 .05 .05 1 \$110 17GT50D 19 1 .250 .05 .05 1 \$110 19GT25D 19 1 .250 .05 .05 1 \$110 19GT25D 20 1 .250 .05 .05 1 \$110 19GT25D 20 1 .250 .05 .05 1 \$110 19GT25D 20 1 .500 .1 .05 1 \$110 19GT50D 21 1 .500 .1 .05 1 \$110 19GT50D 22 1 .250 .05 .05 1 \$100 20GT25D 23 1 .500 .1 .05 1 \$110 20GT50D 24 1 .500 .1 .05 1 \$110 20GT50D 25 1 .500 .1 .05 1 \$110 22GT25D 26 1 .500 .1 .05 1 \$110 22GT25D 27 1 .500 .1 .05 1 \$110 22GT25D 28 1 .250 .05 .05 .1 \$100 22GT25D 29 1 .500 .1 .05 1 \$110 22GT50D 20 1 .500 .1 .05 1 \$110 22GT50D 21 1 .500 .1 .05 1 \$110 22GT50D 22 1 .250 .05 .05 .1 \$100 22GT25D 23 1 .250 .05 .05 .1 \$100 22GT25D 24 1 .500 .1 .05 1 \$110 22GT50D 25 1 .500 .1 .05 1 \$110 22GT50D 26 1 .500 .1 .05 1 \$110 22GT50D 27 1 .500 .1 .05 1 \$110 22GT50D 28 1 .250 .05 .05 .1 \$100 22GT25D 29 1 .500 .1 .05 1 \$110 22GT50D 20 1 .500 .1 .05 1 \$110 22GT50D 21 1 .500 .1 .05 1 \$110 22GT50D 22 1 .500 .5 .05 .1 \$100 22GT25D 23 1 .500 .1 .05 1 \$110 22GT50D 24 1 .500 .1 .05 1 \$110 22GT50D 25 1 .500 .1 .05 1 \$110 22GT50D 26 1 .500 .1 .05 1 \$110 22GT50D 27 1 .500 .1 .05 1 \$110 22GT50D 28 1 .250 .05 .05 1 \$110 22GT50D 29 1 .500 .1 .05 1 \$110 22GT50D 20 1 .500 .1 .05 1 \$110 22GT50D 21 .1 .500 .1 .05 1 \$110 22GT50D 21 .1 .500 .1 .05 1 \$110 22G								
10	9	1	.200	.05	.05			9GT20D
10				_				
11         1         .250         .05         .05         1         \$100         \$11GT25D           11         1         .500         .1         .05         1         \$110         \$11GT50D           12         1         .250         .05         .05         1         \$110         \$12GT25D           12         1         .500         .1         .05         1         \$110         \$12GT50D           13         1         .250         .05         .05         1         \$100         \$13GT25D           13         1         .250         .05         .05         1         \$110         \$13GT25D           15         1         .250         .05         .05         .1         \$100         \$15GT25D           16         1         .250         .05         .05         .1         \$100 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
11         1         .500         .1         .05         1         \$110         \$11GT50D           12         1         .250         .05         .05         1         \$100         \$12GT25D           12         1         .500         .1         .05         1         \$110         \$12GT50D           13         1         .500         .05         .05         1         \$110         \$13GT25D           13         1         .500         .1         .05         1         \$110         \$13GT25D           15         1         .250         .05         .05         1         \$110         \$15GT25D           15         1         .250         .05         .05         1         \$110         \$15GT25D           15         1         .250         .05         .05         1         \$110         \$15GT25D           16         1         .250         .05         .05         1         \$110         \$16GT25D           16         1         .250         .05         .05         1         \$110         \$16GT25D           16         1         .250         .05         .05         1         \$110				_	_			
12         1         .500         .1         .05         1         \$110         12GT50D           13         1         .250         .05         .05         1         \$100         13GT25D           13         1         .500         .1         .05         1         \$110         13GT50D           15         1         .250         .05         .05         1         \$110         15GT25D           16         1         .250         .05         .05         .1         \$110         16GT25D           16         1         .250         .05         .05         .1         \$100         17GT25D           17         1         .250         .05         .05         .1         \$100						_		
13         1         .250         .05         .05         1         \$100         13GT25D           13         1         .500         .1         .05         1         \$110         13GT25D           15         1         .250         .05         .05         1         \$110         15GT25D           15         1         .500         .1         .05         1         \$110         15GT5DD           16         1         .250         .05         .05         1         \$110         16GT25D           16         1         .250         .05         .05         1         \$110         16GT5DD           17         1         .250         .05         .05         1         \$110         16GT5DD           17         1         .250         .05         .05         1         \$110         17GT25D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .250         .05         .05         1         \$110         18GT25D           18         1         .250         .05         .05         1         \$100         1	12	1	.250	.05	.05	1	\$100	12GT25D
13         1         .500         .1         .05         1         \$110         13GT50D           15         1         .250         .05         .05         1         \$100         15GT25D           15         1         .500         .1         .05         1         \$110         15GT50D           16         1         .250         .05         .05         1         \$100         16GT25D           16         1         .500         .1         .05         1         \$110         16GT25D           17         1         .250         .05         .05         1         \$110         17GT25D           17         1         .500         .1         .05         1         \$110         17GT25D           17         1         .500         .1         .05         1         \$110         17GT25D           18         1         .250         .05         .05         1         \$110         18GT25D           18         1         .250         .05         .05         1         \$100         18GT25D           19         1         .250         .05         .05         1         \$100         19GT	12	1	.500	.1	.05	1	\$110	
15         1         .250         .05         .05         1         \$100         15GT25D           15         1         .500         .1         .05         1         \$110         15GT50D           16         1         .250         .05         .05         1         \$110         16GT25D           16         1         .500         .1         .05         1         \$110         16GT50D           17         1         .250         .05         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .250         .05         .05         1         \$100         18GT25D           19         1         .250         .05         .05         1         \$100         19GT25D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .250         .05         .05         1         \$100         2								
15         1         .500         .1         .05         1         \$110         15GT50D           16         1         .250         .05         .05         1         \$100         16GT25D           16         1         .500         .1         .05         1         \$110         16GT50D           17         1         .250         .05         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .250         .05         .05         1         \$100         19GT25D           20         1         .250         .05         .05         1         \$100         21								-
16         1         .250         .05         .05         1         \$100         16GT25D           16         1         .500         .1         .05         1         \$110         16GT50D           17         1         .250         .05         .05         1         \$110         17GT25D           17         1         .500         .1         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$110         18GT25D           18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .250         .05         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         29GT25D           21         1         .250         .05         .05         1         \$100         21								
16         1         .500         .1         .05         1         \$110         16GT50D           17         1         .250         .05         .05         1         \$100         17GT25D           17         1         .500         .1         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         20GT25D           20         1         .250         .05         .05         1         \$110         20GT25D           21         1         .250         .05         .05         1         \$100         21GT25D           21         1         .250         .05         .05         1         \$100         22								
17         1         .500         .1         .05         1         \$110         17GT50D           18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         20GT50D           20         1         .250         .05         .05         1         \$110         20GT50D           20         1         .500         .1         .05         1         \$110         20GT50D           21         1         .250         .05         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         22GT25D           22         1         .250         .05         .05         1         \$100         23		1				1		
18         1         .250         .05         .05         1         \$100         18GT25D           18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$110         19GT25D           19         1         .500         .1         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         20GT5DD           20         1         .250         .05         .05         1         \$110         20GT5DD           21         1         .250         .05         .05         1         \$110         20GT5DD           21         1         .250         .05         .05         1         \$110         21GT5DD           22         1         .250         .05         .05         1         \$110         22GT25D           22         1         .250         .05         .05         1         \$110         22GT5DD           23         1         .250         .05 <t.05< td="">         1         \$100         23G</t.05<>								
18         1         .500         .1         .05         1         \$110         18GT50D           19         1         .250         .05         .05         1         \$100         19GT25D           19         1         .500         .1         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$110         20GT50D           20         1         .500         .1         .05         1         \$110         20GT50D           20         1         .500         .1         .05         1         \$110         20GT50D           21         1         .250         .05         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         22GT50D           22         1         .250         .05         .05         1         \$110         22GT750D           23         1         .250         .05         .05         1         \$100         23GT25D           23         1         .250         .05         .05         1         \$100         23					_			
19         1         .250         .05         .05         1         \$100         19GT25D           19         1         .500         .1         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$100         20GT25D           20         1         .500         .1         .05         1         \$110         20GT50D           21         1         .250         .05         .05         1         \$110         21GT25D           21         1         .250         .05         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         22GT25D           22         1         .250         .05         .05         1         \$110         22GT50D           23         1         .250         .05         .05         1         \$110         23GT25D           23         1         .250         .05 <t.05< td="">         1         \$100         24G</t.05<>								
19         1         .500         .1         .05         1         \$110         19GT50D           20         1         .250         .05         .05         1         \$100         20GT25D           20         1         .500         .1         .05         1         \$110         20GT50D           21         1         .250         .05         .05         1         \$110         21GT50D           21         1         .500         .1         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         22GT25D           22         1         .250         .05         .05         1         \$110         22GT50D           23         1         .250         .05         .05         1         \$110         23GT25D           23         1         .250         .05         .05         1         \$110         23GT25D           24         1         .250         .05         .05         1         \$110         24GT25D           24         1         .250         .05         .05         1         \$110         25					_	_		
20         1         .500         .1         .05         1         \$110         20GT50D           21         1         .250         .05         .05         1         \$100         21GT25D           21         1         .500         .1         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$110         22GT5DD           23         1         .250         .05         .05         1         \$110         23GT25D           23         1         .250         .05         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$110         24GT25D           24         1         .250         .05         .05         1         \$110         24GT25D           25         1         .250         .05         .05         1         \$110         25GT25D           25         1         .250         .05 <t.05< td="">         1         \$110         25G</t.05<>		1				1		
21         1         .250         .05         .05         1         \$100         21GT25D           21         1         .500         .1         .05         1         \$110         21GT25D           22         1         .250         .05         .05         1         \$100         22GT25D           22         1         .500         .1         .05         1         \$110         22GT5DD           23         1         .250         .05         .05         1         \$100         23GT25D           23         1         .500         .1         .05         1         \$110         23GT5DD           24         1         .250         .05         .05         1         \$110         24GT25D           24         1         .250         .05         .05         1         \$110         24GT5DD           25         1         .250         .05         .05         1         \$110         25GT25D           25         1         .250         .05         .05         1         \$110         25GT25D           26         1         .250         .05         .05         1         \$100         26								
21         1         .500         .1         .05         1         \$110         21GT50D           22         1         .250         .05         .05         1         \$100         22GT25D           22         1         .500         .1         .05         1         \$110         22GT50D           23         1         .250         .05         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$110         24GT50D           24         1         .250         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$110         25GT25D           25         1         .250         .05         .05         1         \$110         25GT25D           26         1         .250         .05         .05         1         \$110         26GT25D           28         1         .250         .05 <t.05< td="">         1         \$110         26G</t.05<>			_		_			-
22         1         .250         .05         1         \$100         22GT25D           22         1         .500         .1         .05         1         \$110         22GT5DD           23         1         .250         .05         .05         1         \$100         23GT25D           23         1         .500         .1         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$100         24GT25D           24         1         .500         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$110         25GT25D           25         1         .500         .05         .05         1         \$110         25GT25D           26         1         .250         .05         .05         1         \$110         26GT25D           26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$110         28GT25D								
22         1         .500         .1         .05         1         \$110         22GT50D           23         1         .250         .05         .05         1         \$100         23GT25D           23         1         .500         .1         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$100         24GT25D           24         1         .500         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$100         25GT25D           25         1         .250         .05         .05         1         \$110         25GT25D           26         1         .250         .05         .05         1         \$110         26GT25D           26         1         .400         .05         .05         1         \$110         26GT25D           28         1         .250         .05         .05         1         \$100         28GT25D           28         1         .400         .05         .05         1         \$100         2				_	_			
23         1         .500         .1         .05         1         \$110         23GT50D           24         1         .250         .05         .05         1         \$100         24GT25D           24         1         .500         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$110         25GT25D           26         1         .250         .05         .05         1         \$110         26GT25D           26         1         .250         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$110         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$110         30GT25D           30         1         .400         .05         .05         1         \$110								
24         1         .250         .05         .05         1         \$100         24GT25D           24         1         .500         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$110         25GT25D           25         1         .500         .05         .05         1         \$110         25GT50D           26         1         .250         .05         .05         1         \$110         26GT25D           26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$110         28GT25D           28         1         .400         .05         .05         1         \$110         28GT4DD           30         1         .250         .05         .05         1         \$110         30GT25D           30         1         .250         .05         .05         1         \$110         30GT4DD           31         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
24         1         .500         .05         .05         1         \$110         24GT50D           25         1         .250         .05         .05         1         \$100         25GT25D           25         1         .500         .05         .05         1         \$110         25GT50D           26         1         .250         .05         .05         1         \$110         26GT25D           26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$110         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$110         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td>_</td><td></td><td>_</td><td></td><td></td><td></td></td<>			_		_			
25         1         .250         .05         .05         1         \$100         25GT25D           25         1         .500         .05         .05         1         \$110         25GT50D           26         1         .250         .05         .05         1         \$100         26GT25D           26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$100         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$100         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<>							-	
25         1         .500         .05         .05         1         \$110         25GT50D           26         1         .250         .05         .05         1         \$100         26GT25D           26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$110         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$110         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$110         32GT10D           32         1         .300         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>-</td></td<>					-			-
26         1         .400         .05         .05         1         \$110         26GT40D           28         1         .250         .05         .05         1         \$100         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$100         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$100         32GT10D           32         1         .300         .05         .05         1         \$110         32GT30D           33         1         .100         .05         .05         1         \$100         33GT10D								
28         1         .250         .05         .05         1         \$100         28GT25D           28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$100         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$100         32GT10D           32         1         .300         .05         .05         1         \$110         32GT30D           33         1         .100         .05         .05         1         \$100         33GT10D								
28         1         .400         .05         .05         1         \$110         28GT40D           30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$100         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$100         32GT10D           32         1         .300         .05         .05         1         \$110         32GT30D           33         1         .100         .05         .05         1         \$100         33GT10D				_	_			
30         1         .250         .05         .05         1         \$100         30GT25D           30         1         .400         .05         .05         1         \$110         30GT40D           31         1         .100         .05         .05         1         \$100         31GT10D           31         1         .300         .05         .05         1         \$110         31GT30D           32         1         .100         .05         .05         1         \$100         32GT10D           32         1         .300         .05         .05         1         \$110         32GT30D           33         1         .100         .05         .05         1         \$100         33GT10D								
30     1     .400     .05     .05     1     \$110     30GT40D       31     1     .100     .05     .05     1     \$100     31GT10D       31     1     .300     .05     .05     1     \$110     31GT30D       32     1     .100     .05     .05     1     \$100     32GT10D       32     1     .300     .05     .05     1     \$110     32GT30D       33     1     .100     .05     .05     1     \$100     33GT10D			_			_		
31     1     .300     .05     .05     1     \$110     31GT30D       32     1     .100     .05     .05     1     \$100     32GT10D       32     1     .300     .05     .05     1     \$110     32GT30D       33     1     .100     .05     .05     1     \$100     33GT10D								
32     1     .100     .05     .05     1     \$100     32GT10D       32     1     .300     .05     .05     1     \$110     32GT30D       33     1     .100     .05     .05     1     \$100     33GT10D								
32 1 .300 .05 .05 1 \$110 32GT30D 33 1 .100 .05 .05 1 \$100 33GT10D			_	_		_		
33 1 .100 .05 .05 1 \$100 33GT10D								
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Output Voltage         Ramps Land Line PMS Section (S)         Exection (S)         Section (S)           34         1         1.00         .05         .05         1         \$100         34GT10D           34         1         .300         .05         .05         1         \$110         34GT30D           35         1         .200         .05         .05         1         \$110         .36GT20D           36         1         .200         .05         .05         1         \$110         .36GT20D           38         1         .100         .05         .05         1         \$110         .36GT20D           38         1         .100         .05         .05         1         \$110         .36GT20D           40         1         .100         .05         .05         1         \$110         .36GT20D           40         1         .200         .05         .05         1         \$110         .40GT20D           40         1         .200         .05         .05         1         \$110         .40GT20D           42         1         .100         .05         .05         1         \$110         .44GT10D <th>Nominal</th> <th>Adiust</th> <th>Output</th> <th>Regul</th> <th>ation</th> <th>Ripple</th> <th colspan="2">(see 'How to Order</th>	Nominal	Adiust	Output	Regul	ation	Ripple	(see 'How to Order	
34	Output Voltage	Range ± V	Current Amps.	± %	± %	RMS	Section (\$)	
35						_		
35								
36         1         .200         .05         .05         1         \$110         36GT20D           38         1         .200         .05         .05         1         \$110         38GT10D           40         1         .100         .05         .05         1         \$110         40GT10D           40         1         .200         .05         .05         1         \$110         40GT10D           40         1         .200         .05         .05         1         \$110         40GT20D           40         1         .200         .05         .05         1         \$110         40GT20D           42         1         .200         .05         .05         1         \$110         42GT20D           44         1         .100         .05         .05         1         \$110         44GT20D           44         1         .200         .05         .05         1         \$110         44GT20D           45         1         .100         .05         .05         1         \$110         45GT10D           45         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
38	36	1	.100	.05	.05	1	\$100	36GT10D
38	36			.05	.05		\$110	36GT20D
40						_		
40								
42         1         .100         .05         .05         1         \$100         42GT10D           42         1         .200         .05         .05         1         \$110         42GT20D           44         1         .200         .05         .05         1         \$110         44GT20D           44         1         .200         .05         .05         1         \$110         44GT20D           45         1         .100         .05         .05         1         \$110         45GT10D           46         1         .200         .05         .05         1         \$110         46GT20D           48         1         .100         .05         .05         1         \$110         46GT10D           48         1         .100         .05         .05         1         \$110         46GT10D           48         1         .200         .05         .05         1         \$110         46GT10D           48         1         .200         .05         .05         1         \$110         \$4GT10D           50         1         .200         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
42         1         .200         .05         .05         1         \$110         42GT20D           44         1         .100         .05         .05         1         \$100         44GT10D           44         1         .200         .05         .05         1         \$110         .44GT20D           45         1         .100         .05         .05         1         \$100         .45GT10D           46         1         .100         .05         .05         1         \$110         .45GT20D           46         1         .200         .05         .05         1         \$110         .46GT20D           48         1         .100         .05         .05         1         \$110         .46GT20D           48         1         .200         .05         .05         1         \$115         .48GT10D           48         1         .200         .05         .05         1         \$1105         50GT10D           50         1         .100         .05         .05         1         \$110         50GT10D           50         1         .100         .05         .05         1         \$110						1	-	
44								
45         1         .100         .05         .05         1         \$100         45GT10D           45         1         .200         .05         .05         1         \$110         45GT20D           46         1         .200         .05         .05         1         \$110         46GT20D           48         1         .200         .05         .05         1         \$1105         48GT10D           48         1         .200         .05         .05         1         \$115         48GT20D           50         1         .100         .05         .05         1         \$105         50GT10D           50         1         .100         .05         .05         1         \$115         50GT20D           50         1         .100         .05         .05         1         \$110         50GT20D           52         1         .200         .05         .05         1         \$110         \$2GT20D           54         1         .100         .05         .05         1         \$110         \$5GT20D           54         1         .100         .05         .05         1         \$110 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td></t<>						_		
45         1         .200         .05         .05         1         \$110         45GT20D           46         1         .100         .05         .05         1         \$110         46GT10D           46         1         .200         .05         .05         1         \$1105         48GT10D           48         1         .200         .05         .05         1         \$115         48GT20D           50         1         .100         .05         .05         1         \$115         50GT20D           50         1         .100         .05         .05         1         \$110         50GT20D           50         1         .100         .05         .05         1         \$110         50GT20D           52         1         .200         .05         .05         1         \$110         52GT20D           54         1         .100         .05         .05         1         \$110         54GT20D           54         1         .100         .05         .05         1         \$110         54GT20D           54         1         .100         .05         .05         1         \$110 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
46         1         .100         .05         .05         1         \$100         46GT10D           46         1         .200         .05         .05         1         \$110         46GT20D           48         1         .200         .05         .05         1         \$1105         48GT10D           48         1         .200         .05         .05         1         \$1105         50GT10D           50         1         .100         .05         .05         1         \$115         50GT10D           50         1         .200         .05         .05         1         \$110         50GT20D           50         1         .200         .05         .05         1         \$110         \$2GT20D           52         1         .100         .05         .05         1         \$110         \$2GT20D           54         1         .200         .05         .05         1         \$110         \$5GT20D           54         1         .200         .05         .05         1         \$110         \$5GT20D           55         1         .100         .05         .05         1         \$110         <								
46         1         .200         .05         .05         1         \$110         46GT20D           48         1         .100         .05         .05         1         \$105         48GT10D           48         1         .200         .05         .05         1         \$115         48GT20D           50         1         .100         .05         .05         1         \$115         50GT10D           50         1         .200         .05         .05         1         \$110         52GT10D           52         1         .100         .05         .05         1         \$110         \$2GT10D           52         1         .100         .05         .05         1         \$110         \$4GT10D           54         1         .200         .05         .05         1         \$110         \$4GT10D           54         1         .200         .05         .05         1         \$110         \$4GT20D           55         1         .100         .05         .05         1         \$110         \$5GT10D           55         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
48         1         .100         .05         .05         1         \$115         48GT10D           48         1         .200         .05         .05         1         \$115         48GT20D           50         1         .100         .05         .05         1         \$105         50GT10D           50         1         .200         .05         .05         1         \$110         50GT20D           52         1         .100         .05         .05         1         \$110         52GT10D           52         1         .200         .05         .05         1         \$110         54GT20D           54         1         .100         .05         .05         1         \$110         54GT20D           54         1         .100         .05         .05         1         \$110         54GT20D           54         1         .100         .05         .05         1         \$110         54GT20D           55         1         .100         .05         .05         1         \$110         56GT50D           55         1         .100         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
50         1         .100         .05         .05         1         \$105         \$506T10D           50         1         .200         .05         .05         1         \$115         \$50GT20D           52         1         .200         .05         .05         1         \$110         \$2GT20D           54         1         .100         .05         .05         1         \$110         \$4GT10D           54         1         .100         .05         .05         1         \$110         \$54GT10D           54         1         .200         .05         .05         1         \$110         \$54GT10D           54         1         .200         .05         .05         1         \$110         \$54GT10D           55         1         .100         .05         .05         1         \$110         \$56GT10D           55         1         .200         .05         .05         1         \$110         \$56GT10D           55         1         .050         .05         .05         1         \$110         \$66T10D           56         1         .050         .05         .05         1         \$110		1				1	\$105	
50         1         .200         .05         .05         1         \$115         \$50GT20D           52         1         .100         .05         .05         1         \$110         \$2GT20D           54         1         .100         .05         .05         1         \$110         \$4GT10D           54         1         .100         .05         .05         1         \$110         \$4GT20D           54         1         .200         .05         .05         1         \$110         \$54GT10D           54         1         .200         .05         .05         1         \$110         \$54GT10D           55         1         .100         .05         .05         1         \$110         \$56GT10D           55         1         .200         .05         .05         1         \$110         \$56GT10D           56         1         .050         .05         .05         1         \$110         \$56GT10D           56         1         .050         .05         .05         1         \$110         \$6GT05D           58         1         .050         .05         .05         1         \$110	48	1		.05	.05	1	\$115	48GT20D
52         1         .100         .05         .05         1         \$110         \$2GT10D           52         1         .200         .05         .05         1         \$120         \$2GT20D           54         1         .100         .05         .05         1         \$110         \$4GT20D           54         1         .200         .05         .05         1         \$110         \$4GT20D           55         1         .100         .05         .05         1         \$110         \$5GT10D           55         1         .100         .05         .05         1         \$110         \$5GT10D           56         1         .050         .05         .05         1         \$110         \$5GGT5D           56         1         .050         .05         .05         1         \$110         \$5GGT5D           58         1         .050         .05         .05         1         \$110         \$5GGT5D           58         1         .050         .05         .05         1         \$110         \$6GT5DD           60         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td></td<>						_		
52         1         .200         .05         .05         1         \$120         \$2GT20D           54         1         .100         .05         .05         1         \$110         \$4GT10D           54         1         .200         .05         .05         1         \$110         \$54GT20D           55         1         .100         .05         .05         1         \$110         \$56GT10D           56         1         .050         .05         .05         1         \$110         \$6GT05D           56         1         .100         .05         .05         1         \$110         \$6GT10D           58         1         .050         .05         .05         1         \$110         \$58GT10D           60         1         .050         .05         .05         1         \$110         \$6GT10D           60         1         .050         .05         .05         1         \$110         \$6GT10D           60         1         .050         .05         .05         1         \$110         \$6GT10D           60         1         .050         .05         .05         1         \$110							-	
54         1         .100         .05         .05         1         \$110         \$4GT10D           54         1         .200         .05         .05         1         \$110         \$54GT20D           55         1         .100         .05         .05         1         \$110         \$5GT10D           55         1         .200         .05         .05         1         \$110         \$5GT10D           56         1         .050         .05         .05         1         \$110         \$5GT05D           56         1         .050         .05         .05         1         \$110         \$56GT10D           58         1         .050         .05         .05         1         \$110         \$56GT10D           58         1         .050         .05         .05         1         \$110         \$6GT05D           60         1         .050         .05         .05         1         \$110         \$6GT05D           60         1         .100         .05         .05         1         \$110         \$62GT10D           62         1         .050         .05         .05         1         \$110								
54         1         .200         .05         .05         1         \$120         54GT20D           55         1         .100         .05         .05         1         \$110         55GT10D           55         1         .200         .05         .05         1         \$110         55GT20D           56         1         .050         .05         .05         1         \$110         56GT10D           58         1         .050         .05         .05         1         \$110         58GT05D           60         1         .050         .05         .05         1         \$110         58GT10D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .050         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT10D           62         1         .050         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td>_</td><td></td><td>-</td><td></td></td<>					_		-	
55         1         .200         .05         .05         1         \$120         55GT20D           56         1         .050         .05         .05         1         \$110         56GT05D           56         1         .100         .05         .05         1         \$120         56GT10D           58         1         .050         .05         .05         1         \$110         58GT05D           60         1         .050         .05         .05         1         \$110         60GT10D           60         1         .050         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
56         1         .050         .05         .05         1         \$110         56GT05D           56         1         .100         .05         .05         1         \$120         56GT10D           58         1         .050         .05         .05         1         \$110         58GT05D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .050         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         65GT05D           65         1         .050         .05         .05         1         \$110 <td< td=""><td>55</td><td>1</td><td>.100</td><td>.05</td><td>.05</td><td>1</td><td>\$110</td><td>55GT10D</td></td<>	55	1	.100	.05	.05	1	\$110	55GT10D
56         1         .100         .05         .05         1         \$120         56GT10D           58         1         .050         .05         .05         1         \$110         58GT05D           58         1         .100         .05         .05         1         \$120         58GT10D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .050         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT05D           62         1         .050         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           65         1         .050         .05         .05         1         \$110 <td< td=""><td>55</td><td>1</td><td>.200</td><td>.05</td><td>.05</td><td>1</td><td>\$120</td><td>55GT20D</td></td<>	55	1	.200	.05	.05	1	\$120	55GT20D
58         1         .050         .05         .05         1         \$110         58GT05D           58         1         .100         .05         .05         1         \$120         58GT10D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .100         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT05D           62         1         .100         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
58         1         .100         .05         .05         1         \$120         58GT10D           60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .100         .05         .05         1         \$110         60GT10D           62         1         .050         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110         65GT10D           68         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
60         1         .050         .05         .05         1         \$110         60GT05D           60         1         .100         .05         .05         1         \$120         60GT10D           62         1         .050         .05         .05         1         \$110         62GT05D           62         1         .100         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         68GT50D           68         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td></td<>						_		
60         1         .100         .05         .05         1         \$120         60GT10D           62         1         .050         .05         .05         1         \$110         62GT05D           62         1         .100         .05         .05         1         \$110         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .050         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT5D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110         67GT05D           67         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         68GT5D           68         1         .050         .05         .05         1         \$110         6								
62         1         .100         .05         .05         1         \$120         62GT10D           64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .100         .05         .05         1         \$110         64GT10D           65         1         .050         .05         .05         1         \$110         65GT05D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .050         .05         .05         1         \$110         68GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
64         1         .050         .05         .05         1         \$110         64GT05D           64         1         .100         .05         .05         1         \$120         64GT10D           65         1         .050         .05         .05         1         \$110         65GT05D           65         1         .050         .05         .05         1         \$110         65GT10D           67         1         .050         .05         .05         1         \$110         67GT05D           67         1         .050         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$110         68GT10D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           70         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
64         1         .100         .05         .05         1         \$120         64GT10D           65         1         .050         .05         .05         1         \$110         65GT05D           65         1         .050         .05         .05         1         \$120         65GT10D           67         1         .050         .05         .05         1         \$110         67GT05D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$110         68GT10D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           70         1         .050         .05         .05         1         \$110         70GT05D           75         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td></td<>						_		
65         1         .050         .05         .05         1         \$110         65GT05D           65         1         .100         .05         .05         1         \$120         65GT10D           67         1         .050         .05         .05         1         \$110         67GT05D           67         1         .100         .05         .05         1         \$110         67GT10D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$110         68GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .050         .05         .05         1         \$110         69GT05D           70         1         .050         .05         .05         1         \$110         70GT05D           75         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
65         1         .100         .05         .05         1         \$120         65GT10D           67         1         .050         .05         .05         1         \$110         67GT05D           67         1         .100         .05         .05         1         \$110         67GT05D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$110         68GT10D           69         1         .050         .05         .05         1         \$110         69GT05D           70         1         .050         .05         .05         1         \$110         70GT05D           75         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td>_</td><td></td><td>-</td><td></td></td<>					_		-	
67         1         .100         .05         .05         1         \$120         67GT10D           68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$120         68GT10D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .100         .05         .05         1         \$110         69GT10D           70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .050         .05         .05         1         \$110         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .100         .05         .05         1         \$110         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
68         1         .050         .05         .05         1         \$110         68GT05D           68         1         .100         .05         .05         1         \$120         68GT0D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .100         .05         .05         1         \$110         69GT05D           70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .100         .05         .05         1         \$110         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .050         .05         .05         1         \$110         75GT05D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .020         .05         .05         1         \$110         80GT02D           80         1         .020         .05         .05         1         \$110	67	1	.050	.05	.05	1		67GT05D
68         1         .100         .05         .05         1         \$120         68GT10D           69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .100         .05         .05         1         \$120         69GT10D           70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .100         .05         .05         1         \$120         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .100         .05         .05         1         \$110         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$110         76GT02D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$110 <td< td=""><td></td><td></td><td></td><td>.05</td><td>.05</td><td></td><td>, ,</td><td></td></td<>				.05	.05		, ,	
69         1         .050         .05         .05         1         \$110         69GT05D           69         1         .100         .05         .05         1         \$120         69GT10D           70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .100         .05         .05         1         \$110         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .100         .05         .05         1         \$120         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$110         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
69         1         .100         .05         .05         1         \$120         69GT10D           70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .100         .05         .05         1         \$120         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$120         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$110         80GT02D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$115         85GT05D           90         1         .020         .05         .05         1         \$130 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
70         1         .050         .05         .05         1         \$110         70GT05D           70         1         .100         .05         .05         1         \$120         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .100         .05         .05         1         \$110         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$110         80GT02D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$110         80GT02D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$115         90GT05D           90         1         .020         .05         .05         1         \$130 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
70         1         .100         .05         .05         1         \$120         70GT10D           75         1         .050         .05         .05         1         \$110         75GT05D           75         1         .100         .05         .05         1         \$120         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$120         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$130         85GT05D           90         1         .020         .05         .05         1         \$115         90GT02D           95         1         .020         .05         .05         1         \$130 <td< td=""><td>70</td><td>1</td><td></td><td></td><td></td><td>1</td><td></td><td></td></td<>	70	1				1		
75         1         .100         .05         .05         1         \$120         75GT10D           76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$120         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$130         85GT05D           90         1         .020         .05         .05         1         \$115         90GT02D           90         1         .050         .05         .05         1         \$130         90GT05D           95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135 <td< td=""><td>70</td><td>1</td><td>.100</td><td>.05</td><td>.05</td><td>1</td><td>\$120</td><td>70GT10D</td></td<>	70	1	.100	.05	.05	1	\$120	70GT10D
76         1         .020         .05         .05         1         \$110         76GT02D           76         1         .050         .05         .05         1         \$120         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$130         85GT05D           90         1         .020         .05         .05         1         \$115         90GT02D           90         1         .050         .05         .05         1         \$130         90GT02D           95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
76         1         .050         .05         .05         1         \$120         76GT05D           80         1         .020         .05         .05         1         \$110         80GT02D           80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$130         85GT05D           90         1         .020         .05         .05         1         \$115         90GT02D           90         1         .050         .05         .05         1         \$130         90GT02D           95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130         100GT02D						_		
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80         1         .050         .05         .05         1         \$120         80GT05D           85         1         .020         .05         .05         1         \$115         85GT02D           85         1         .050         .05         .05         1         \$130         85GT05D           90         1         .020         .05         .05         1         \$115         90GT02D           90         1         .050         .05         .05         1         \$130         90GT05D           95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130         100GT02D								
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90         1         .020         .05         .05         1         \$115         90GT02D           90         1         .050         .05         .05         1         \$130         90GT05D           95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130         100GT02D								
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95         1         .020         .05         .05         1         \$120         95GT02D           95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130         100GT02D							-	
95         1         .050         .05         .05         1         \$135         95GT05D           100         1         .020         .05         .05         1         \$130         100GT02D								
100 1 .020 .05 .05 1 \$130 100GT02D								
100 1 .050 .05 .05 1 \$140 100GT05D	100		.020	.05	.05		\$130	
	100	1	.050	.05	.05	1	\$140	100GT05D

### **DUAL OUTPUT (User-selectable)**

#### - (OUTPUTS TO 2 AMPS.) —

Nominal	Adiust	Output	Regul	ation	Ripple	(see 'How	to Order')
Output Voltage	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	Price per Section (\$)	Section
1.5	.5	.400	.5	.1	1	\$110	1.5GT40D
2.5	.5	.400	.5	.1	1	\$110	2.5GT40D
3	.5	.400	.5	.1	1	\$110	3GT40D
3	.5	.700	.5	.1	1	\$115	3GT70D
3	.5	1.0	.5	.1	1	\$120	3GT100D
3.3	.5	.400	.3	.1	1	\$110	3.3GT40D
3.3	.5	.700	.4	.1	1	\$115	3.3GT70D
3.3	.5	1.0	.5	.1	1	\$120	3.3GT100D
5	.5	.500	.3	.05	1	\$110	5GT50D
5	.5	.700	.4	.05	1	\$115	5GT70D
5 5	.5 .25	1.0 2.0	.5 .5	.05	1	\$120 \$140	5GT100D 5GT200D
			_	_			
6	1	.500	.15	.05	1	\$110	6GT50D
6	.5 .5	.700 1.0	.2 .3	.05	1	\$115 \$120	6GT70D 6GT100D
			_	_			
7	1	.500	.15	.05	1	\$110	7GT50D
7	.5 .5	.700 1.0	.2 .3	.05	1	\$115 \$120	7GT70D 7GT100D
				-	_		
8	1	.500	.1	.05	1	\$110	8GT50D
8	.5 .5	.700 1.0	.15 .2	.05	1	\$115 \$120	8GT70D 8GT100D
9	1	_		<del></del>			
9	.5	.500 .700	.1 .15	.05	1	\$110 \$115	9GT50D 9GT70D
9	.5	1.0	.2	.05	1	\$120	9GT100D
10	1	.500	.1	.05	1	\$110	10GT50D
10	.5	.700	.15	.05	1	\$115	10GT30D
10	.5	1.0	.2	.05	1	\$120	10GT100D
12	1	.500	.1	.05	1	\$110	12GT50D
12	.5	.700	.1	.05	1	\$115	12GT70D
12	.5	1.0	.1	.05	1	\$120	12GT100D
14	1	.500	.1	.05	1	\$110	14GT50D
14	.5	.700	.1	.05	1	\$115	14GT70D
14	.5	1.0	.1	.05	1	\$120	14GT100D
15	1	.500	.1	.05	1	\$110	15GT50D
15	.5	.700	.1	.05	1	\$115	15GT70D
15	.5	1.0	.1	.05	1	\$120	15GT100D
16	1	.500	.1	.05	1	\$110	16GT50D
16	.5	.700	.1	.05	1	\$115	16GT70D
16	.5	1.0	.1	.05	1	\$130	16GT100D
18	1	.500	.1	.05	1	\$110	18GT50D
18	.5	.700	.1	.05	1	\$115	18GT70D
18	.5	1.0	.1	.05	1	\$130	18GT100D
19	1	.500	.1	.05	1	\$110	19GT50D
19	.5	.750	.1	.05	1	\$120	19GT75D
20	1	.500	.1	.05	1	\$110	20GT50D
20	.5	.750	.1	.05	1	\$120	20GT75D

#### (90 TO 150 VOLTS)

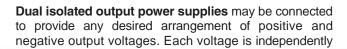
Nominal	Adiust	Output	Regul	ation	Ripple	(see 'How	to Order')
Output Voltage	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	Price per Section (\$)	Section
90	1	.050	.05	.05	1	\$130	90GT05D
90	1	.100	.05	.05	1	\$145	90GT10D
95	1	.050	.05	.05	1	\$135	95GT05D
95	1	.100	.05	.05	1	\$150	95GT10D
100	1	.050	.05	.05	1	\$140	100GT05D
100	1	.100	.05	.05	1	\$155	100GT10D
105	1	.050	.05	.05	1	\$140	105GT05D
105	1	.100	.05	.05	1	\$155	105GT10D
110	1	.050	.05	.05	1	\$145	110GT05D
110	1	.100	.05	.05	1	\$160	110GT10D
115	1	.050	.05	.05	1	\$145	115GT05D
115	1	.100	.05	.05	1	\$160	115GT10D
120	1	.050	.05	.05	1	\$150	120GT05D
120	1	.100	.05	.05	1	\$165	120GT10D
125	1	.050	.05	.05	1	\$155	125GT05D
125	1	.100	.05	.05	1	\$170	125GT10D
130	1	.050	.05	.05	1	\$155	130GT05D
130	1	.100	.05	.05	1	\$170	130GT10D
135	1	.050	.05	.05	1	\$155	135GT05D
135	1	.100	.05	.05	1	\$170	135GT10D
140	1	.050	.05	.05	1	\$155	140GT05D
140	1	.100	.05	.05	1	\$170	140GT10D
145	1	.050	.05	.05	1	\$155	145GT05D
145	1	.100	.05	.05	1	\$170	145GT10D
150	1	.050	.05	.05	1	\$155	150GT05D
150	1	.100	.05	.05	1	\$170	150GT10D



# Gold Box DUAL ISOLATED OUTPUTS (5v/12v combinations)

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- ·(E
- Five Year Warranty





Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

**Polarity:** Outputs are floating. Each may be independently connected to provide any combination of positive and negative voltages. Outputs may be floated up to 300 volts above ground.

Temperature Coefficient: 0.02%/°C (Typical).

**Ambient Operating Temperature:** -10 to +60°C. No derating required.

Storage Temperature: -55 to +85°C.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

**Overvoltage Protection:** Two separate, preset overvoltage protection circuits, one for each output. To order, add prefix "V" to model number and add \$45.00 to the standard price.

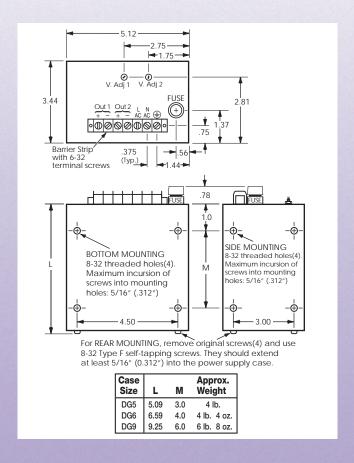
**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. To order, add suffix "-230" to model number and \$25.00 to the standard price. The "-230" option requires two additional days.



adjustable. No derating is required up to +60°C. A separate overvoltage protector on each output is available as a built-in option.

Nominal	Nominal Adjust Output Regulation		Ripple					
Output Voltages	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
5 12	.25 1	2.0 .600	.15 .15	.15 .15	1 1	\$235	512D5A	DG5
5 12	.25 1	3.0 1.2	.15 .15	.15 .15	1 1	\$270	512D6A	DG6
5 12	.25 1	6.0 2.4	.15 .15	.15 .15	1	\$330	512D9A	DG9





# Gold Box TRIPLE ISOLATED OUTPUTS

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- (€
- Five Year Warranty



**Triple isolated output power supplies** provide the features and characteristics of three supplies in one compact, easy-to-use package. They are available in the voltage combinations most frequently required for driving microprocessors and associated circuitry.

#### **SPECIFICATIONS**

**Input Voltage:** 105-125 VAC, 50-400 Hz, single phase. **Polarity:** Outputs are floating. Each output may be independently connected to provide any combination of positive and negative voltages. Outputs may be floated up to 300 volts above ground.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** -10 to +60°C.

No derating required.

Storage Temperature: -55 to +85°C.

Accessory Mounting Kits: See page 91.

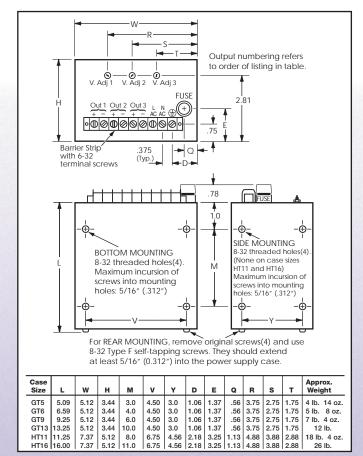
**OPTIONS** 

**Overvoltage Protection:** Separate overvoltage protection circuit on each output. Add prefix "3V" to model number and increase standard price as follows:

**Terminal Strip Cover:** Clips on. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** Add suffix "-230" to the model number and \$25.00 to the price. Requires two additional days.

Nominal	Adjust	Output	Regul	ation	Ripple			
Output Voltages	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
5 5 12	.25 .25 1	3.0 1.0 .600	.15 .15 .15	.15 .15 .15	1 1 1	\$285	5512T6A	GT6
5 5 12	.25 .25 1	6.0 2.0 1.2	.15 .15 .15	.15 .15 .15	1 1 1	\$350	5512T9A	GT9
5 9 12	.25 1 1	6.0 1.4 1.2	.15 .15 .15	.15 .15 .15	1 1 1	\$350	5912T9A	GT9
5 12 12	.25 1 1	2.0 .300 .300	.15 .15 .15	.15 .15 .15	1 1 1	\$255	51212T5A	GT5
5 12 12	.25 1 1	3.0 .600 .600	.15 .15 .15	.15 .15 .15	1 1 1	\$285	51212T6A	GT6
5 12 12	.25 1 1	6.0 1.2 1.2	.15 .15 .15	.15 .15 .15	1 1 1	\$350	51212T9A	GT9
5 12 12	.25 1 1	8.0 1.3 1.3	.15 .15 .15	.15 .15 .15	1 1 1	\$390	51212T13A	GT13
5 12 12	.5 1 1	15.0 2.0 2.0	.15 .15 .15	.15 .15 .15	1 1 1	\$465	51212T11A	HT11



I	Nominal	Adjust	Output	Regul	ation	Ripple			
	Output Voltages	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
	5 12 12	.5 1 1	20.0 3.0 3.0	.15 .15 .15	.15 .15 .15	1 1 1	\$525	51212T16A	HT16
	5 15 15	.25 1 1	2.0 .250 .250	.15 .15 .15	.15 .15 .15	1 1 1	\$255	51515T5A	GT5
	5 15 15	.25 1 1	3.0 .500 .500	.15 .15 .15	.15 .15 .15	1 1 1	\$285	51515T6A	GT6
	5 15 15	.25 1 1	6.0 1.0 1.0	.15 .15 .15	.15 .15 .15	1 1 1	\$350	51515T9A	GT9
	5 15 15	.25 1 1	8.0 1.1 1.1	.15 .15 .15	.15 .15 .15	1 1 1	\$390	51515T13A	GT13
	5 15 15	.5 1 1	15.0 1.5 1.5	.15 .15 .15	.15 .15 .15	1 1 1	\$465	51515T11A	HT11
	5 15 15	.5 1 1	20.0 2.5 2.5	.15 .15 .15	.15 .15 .15	1 1 1	\$525	51515T16A	HT16



#### **High Voltage AC-DC**

# RACK MOUNTING REGULATED

Output ranges: 0 - 1,000 volts to 0 - 30,000 volts

- Shipped Within 9 Days
- Five Year Warranty (internal encapsulated module One Year)



**Ideal for laboratory and instrumentation** applications, these rack mounting supplies have the same output ratings and specifications as the modular supplies shown on pages 70 and 71, but additionally feature calibrated

ten-turn controls (with locking vernier dials) for precisely setting voltage and current. Voltmeter, ammeter and handles are standard. An 8´long shielded output cable is included.

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

**Input Current:** 

30 watt output ratings: 0.6A 60 watt output ratings: 1.2A

**Output Polarity:** Positive output is standard. For negative output, change first letter of model number from P to N.

Regulation (constant voltage operation):

Line: ±0.05% Load: ±0.05%

Regulation (constant current operation):

Line: ±0.1%

**Load:**  $\pm 0.1\%$  plus 50  $\mu$ A. **Ripple:** 0.05%, peak-to-peak.

**Output Controls:** Voltage and current may be controlled by means of two 10-turn front panel adjustments with locking vernier dials. Control linearity is 1% of full rated output. Calibration accuracy is 1% of rated output plus 1% of setting. (Remotely located 1000 ohm potentiometers may alternately be used for output control.)

**Metering:** Voltmeter and ammeter are standard. Accuracy is 2% of full scale.

**Voltage Monitor Terminal:** Permits remote monitoring of output voltage, stepped down by ratio shown. Accuracy is 2% of maximum rated output voltage.

**Current Monitor Terminal:** Permits remote monitoring of output current, at mV/mA ratio shown. Accuracy is 2% of maximum rated output current.

Inhibit Terminal: Grounding inhibits output.

**Input Protection:** "Soft start" circuit minimizes start-up power stresses.

**Output Programming:** Output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +5.1 Vdc, ±2%.

**Output Protection:** Current regulation circuit protects power supply from short circuits, overload, and arcing.

Response Time: Less than 5 mS for 100  $\mu A$  load step change.

**Stability:** 0.05% over eight hours, after 30 minute warmup.

**Temperature Coefficient:** 200 PPM/°C = 0.02%/°C (Typical).

**Ambient Operating Temperature:** -10 to +60°C. No derating required.

Storage Temperature: -20 to +85°C.

**Humidity:** Maximum of 90% relative, non-condensing.

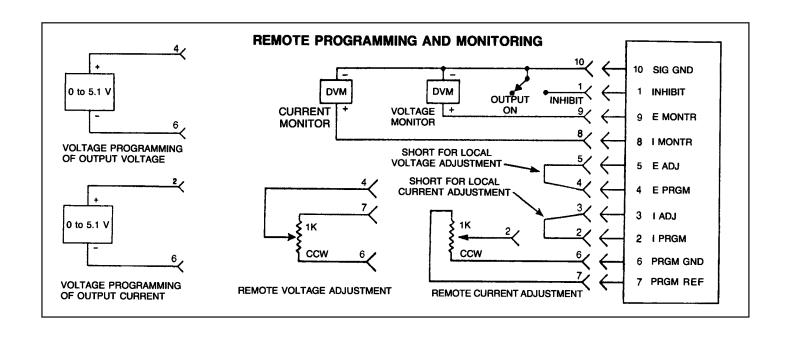
#### Connections:

**Input, Control and Monitoring:** Screw terminals. **Output:** High voltage connector (Type varies with model number). An 8´ shielded output cable, with mating connector installed, is provided.

#### **OPTIONS**

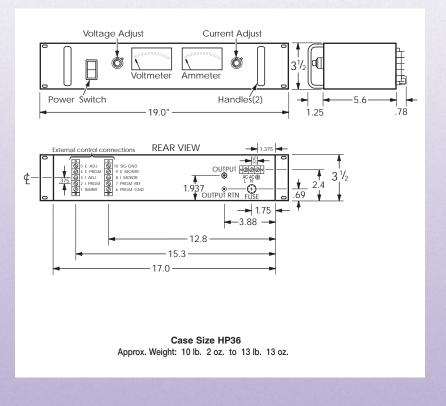
**Terminal Strip Cover:** Clips on AC input terminal strip. To order, add suffix "M" to model number and \$5.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz, single phase. To order, add suffix "–230" to model number and add \$40.00 to price. The "–230" option requires two additional days.



Output	Output	Output Mo	nitor Ratio	(4)	Model
Range	Current	Voltage	Current	(\$)	(Positive)*
kVdc	mA		mV/mA	Price	Output
0-1	30	1,000:1	100:1	1090	P01HP30
0-1	60	1,000:1	10:1	1195	P01HP60
0-1.5	20	1,000:1	100:1	1195	P01.5HP20
0-1.5	40	1,000:1	100:1	1305	P01.5HP40
0-2	15	1,000:1	100:1	1090	P02HP15
0-2	30	1,000:1	100:1	1195	P02HP30
0-2.5	12	1,000:1	100:1	1090	P02.5HP12
0-2.5	24	1,000:1	100:1	1195	P02.5HP24
0-3.5	8.5	1,000:1	100:1	1090	P03.5HP8.5
0-3.5	17	1,000:1	100:1	1195	P03.5HP17
0-5	6	10,000:1	100:1	1145	P05HP6
0-5	12	10,000:1	100:1	1255	P05HP12
0-7.5	4	10,000:1	100:1	1145	P07.5HP4
0-7.5	8	10,000:1	100:1	1255	P07.5HP8
0-10	3	10,000:1	1,000:1	1145	P010HP3
0-10	6	10,000:1	100:1	1255	P010HP6
0-12	2.5	10,000:1	1,000:1	1145	P012HP2.5
0-12	5	10,000:1	100:1	1255	P012HP5
0-15	2	10,000:1	1,000:1	1195	P015HP2
0-15	4	10,000:1	100:1	1305	P015HP4
0-18	1.6	10,000:1	1,000:1	1195	P018HP1.6
0-18	3.2	10,000:1	1,000:1	1305	P018HP3.2
0-20	1.5	10,000:1	1,000:1	1195	P020HP1.5
0-20	3	10,000:1	1,000:1	1305	P020HP3
0-22	1.3	10,000:1	1,000:1	1255	P022HP1.3
0-22	2.6	10,000:1	1,000:1	1360	P022HP2.6
0-25	1.2	10,000:1	1,000:1	1305	P025HP1.2
0-25	2.4	10,000:1	1,000:1	1415	P025HP2.4
0-30	1	10,000:1	1,000:1	1305	P030HP1
0-30	2	10,000:1	1,000:1	1415	P030HP2

<sup>\*</sup> Positive output is standard. For negative output, change first letter of model number from P to N.





#### **High Voltage AC-DC**

#### MODULAR REGULATED

Output ranges:

0 - 1,000 volts to 0 - 30,000 volts

- Shipped Within 6 Days
- Five Year Warranty (internal encapsulated module One Year)



These modular High Voltage supplies may be used as constant voltage or constant current sources. They may be remotely programmed by means of either voltage or resistance, and have provisions for remote monitoring and output inhibiting. All control and monitoring connections

are on a pluggable terminal block that functions as a connector, providing wiring convenience and permitting easy and rapid connect/disconnect. Outputs are arc/short circuit protected.

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

**Output Polarity:** Positive output is standard. For negative output, change first letter of model number from P to N.

Regulation (constant voltage operation):

Line: ±0.05% Load: ±0.05%

Regulation (constant current operation):

Line: ±0.1%

**Load:**  $\pm 0.1\%$  plus 50  $\mu$ A. **Ripple:** 0.05%, peak-to-peak.

**Output Controls:** Voltage and current may be controlled by means of two 20-turn front panel adjustments, or by using remotely located 1000 ohm potentiometers.

**Output Programming:** Output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +5.1 Vdc.

**Voltage Monitor Terminal:** Permits monitoring output voltage, stepped down by ratio shown. Accuracy is 2% of maximum rated output voltage.

**Current Monitor Terminal:** Permits monitoring output current at mV/mA ratio shown. Accuracy is 2% of maximum rated output current.

Inhibit Terminal: Grounding inhibits output.

**Input Protection:** "Soft start" circuit minimizes start-up power stresses.

**Output Protection:** Current regulation circuit protects power supply from short circuits, overload, and arcing.

Efficiency: Greater than 70% at full load.

Response Time: Less than 5 mS for 100  $\mu A$  load step change.

**Stability:** 0.05% over eight hours, after 30 minute warmup.

**Temperature Coefficient:** 200 PPM/°C = 0.02%/°C (Typical).

**Ambient Operating Temperature:** -10 to +60°C. No derating required.

Storage Temperature: -20 to +85°C.

**Humidity:** Maximum of 90% relative, non-condensing.

**Connections:** 24" flying lead for high side of output and 5-way binding post for return (ground) are at the rear. AC input connections on separate terminal strip. All other connections on pluggable terminal block.

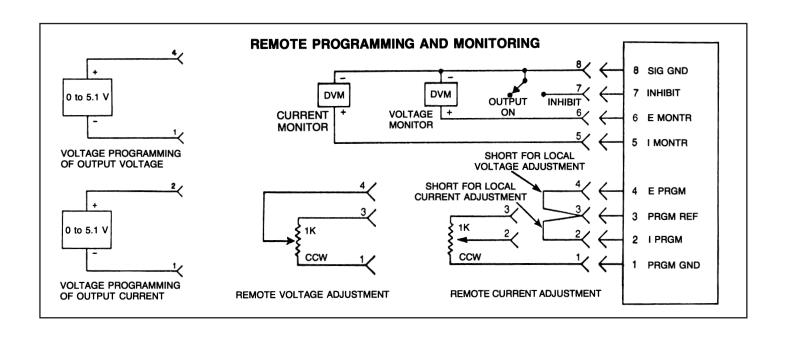
**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface, see accessory Mounting Kit GB8 on page 91.

#### **OPTIONS**

**Terminal Strip Cover:** Clips on AC input terminal strip. To order, add suffix "M" to model number and \$5.00 to price.

**Output Connector:** Models with an output of 5000 volts or less can be provided with an MHV connector (and 8' long detachable shielded output cable with mating MHV connector installed on one end) instead of the flying lead. To order, add suffix letter "T" to the model number and \$50.00 to price.

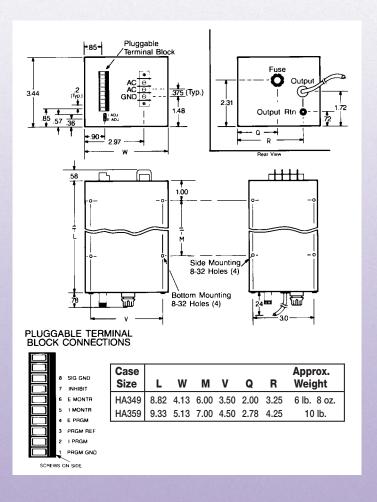
**230 Volt Input:** For operation on inputs of 210-250 VAC, 50-400 Hz, single phase. To order, add suffix "–230" to model number and \$40.00 to price. The "–230" option requires two additional days.



#### **AC-DC MODELS**

Output	Output	Output Mo	nitor Ratio	,	Model	
Range	Current	Voltage	Current	(\$)	(Positive)*	Case
kVdc	mA		mV/mA	Price	Output)*	Size
0-1	30	1,000:1	100:1	650	P01HA30	HA349
0-1	60	1,000:1	10:1	760	P01HA60	HA359
0-1.5	20	1,000:1	100:1	650	P01.5HA20	HA349
0-1.5	40	1,000:1	100:1	760	P01.5HA40	HA359
0-2	15	1,000:1	100:1	650	P02HA15	HA349
0-2	30	1,000:1	100:1	760	P02HA30	HA359
0-2.5	12	1,000:1	100:1	650	P02.5HA12	HA349
0-2.5	24	1,000:1	100:1	760	P02.5HA24	HA359
0-3.5	8.5	1,000:1	100:1	650	P03.5HA8.5	HA349
0-3.5	17	1,000:1	100:1	760	P03.5HA17	HA359
0-5	6	10,000:1	100:1	720	P05HA6	HA349
0-5	12	10,000:1	100:1	830	P05HA12	HA359
0-7.5	4	10,000:1	100:1	720	P07.5HA4	HA349
0-7.5	8	10,000:1	100:1	830	P07.5HA8	HA359
0-10	3	10,000:1	1,000:1	720	P010HA3	HA349
0-10	6	10,000:1	100:1	830	P010HA6	HA359
0-12	2.5	10,000:1	1,000:1	720	P012HA2.5	HA349
0-12	5	10,000:1	100:1	830	P012HA5	HA359
0-15	2	10,000:1	1,000:1	760	P015HA2	HA349
0-15	4	10,000:1	100:1	870	P015HA4	HA359
0-18	1.6	10,000:1	1,000:1	760	P018HA1.6	HA349
0-18	3.2	10,000:1	1,000:1	870	P018HA3.2	HA359
0-20	1.5	10,000:1	1,000:1	870	P020HA1.5	HA349
0-20	3	10,000:1	1,000:1	975	P020HA3	HA359
0-22	1.3	10,000:1	1,000:1	870	P022HA1.3	HA349
0-22	2.6	10,000:1	1,000:1	975	P022HA2.6	HA359
0-25	1.2	10,000:1	1,000:1	975	P025HA1.2	HA349
0-25	2.4	10,000:1	1,000:1	1085	P025HA2.4	HA359
0-30	1	10,000:1	1,000:1	975	P030HA1	HA349
0-30	2	10,000:1	1,000:1	1085	P030HA2	HA359

<sup>\*</sup> Positive output is standard. For negative output, change first letter of model number from P to N.



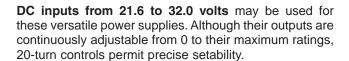


# **High Voltage DC-DC**

#### MODULAR REGULATED

Output ranges: 0 - 1,000 volts to 0 - 30,000 volts

- Shipped Within 6 Days
- Five Year Warranty (internal encapsulated module - One Year)





Input Voltage: +21.6 to 32.0 Vdc.

**Output Polarity:** Positive output is standard. For negative output, change first letter of model number from P to N.

Regulation (constant voltage operation):

Line: ±0.05% Load: ±0.05%

Regulation (constant current operation):

Line: ±0.1%

**Load:** ±0.1% plus 50 μA.

Ripple: 0.05%, peak-to-peak.

**Output Controls:** Voltage and current may be controlled by means of two 20-turn front panel adjustments, or by using remotely located 1000 ohm potentiometers.

**Output Programming:** Output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +5.1 Vdc.

**Voltage Monitor Terminal:** Permits monitoring output voltage, stepped down by ratio shown. Accuracy is 2% of maximum rated output voltage.

**Current Monitor Terminal:** Permits monitoring output current at mV/mA ratio shown. Accuracy is 2% of maximum rated output current.

Inhibit Terminal: Grounding inhibits output.

**Input Protection:** "Soft start" circuit minimizes start-up power stresses.

**Output Protection:** Current regulation circuit protects power supply from short circuits, overload, and arcing.



These supplies have been designed to withstand severe arcing and short circuits without damage. They are ruggedly constructed with quality components to provide many years of reliable service.

Efficiency: Greater than 70% at full load.

Response Time: Less than 5 mS for 100  $\mu A$  load step change.

**Stability:** 0.05% over eight hours, after 30 minute warmup.

**Temperature Coefficient:** 200 PPM/°C = 0.02%/°C (Typical).

Ambient Operating Temperature: -10 to +60°C.

No derating required.

Storage Temperature: -20 to +85°C.

**Humidity:** Maximum of 90% relative, non-condensing.

**Connections:** 24" flying lead for high side of output and 5-way binding post for return (ground). All other connections on pluggable terminal block.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

#### **OPTIONS**

**Output Connector:** Models with an output of 5000 volts or less can be provided with an MHV connector (and 8' long detachable shielded output cable with mating MHV connector installed on one end) instead of the flying lead. To order, add suffix letter "T" to the model number and \$50.00 to price.

#### **OPTIONAL OUTPUT CONNECTOR**

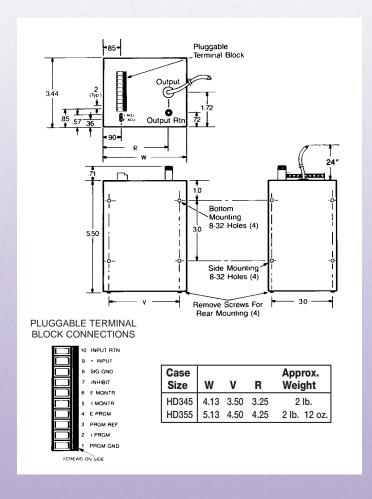
Models with an output of 5000 volts or less can be provided with an MHV connector (and 8' long detachable output cable with mating MHV connector installed on one end) instead of the flying lead. To order, add suffix letter "T" to the model number and \$50.00 to price.



#### **DC-DC MODELS**

Output	Output	Output Mo	onitor Ratio	(4)	Model	
Range kVdc	Current mA	Voltage	Current mV/mA	(\$) Price	(Positive)* Output	Case Size
0-1	30	1,000:1	100:1	545	P01HD30	HD345
0-1	60	1,000:1	10:1	650	P01HD60	HD355
0-1.5	20	1,000:1	100:1	545	P01.5HD20	HD345
0-1.5	40	1,000:1	100:1	650	P01.5HD40	HD355
0-2	15	1,000:1	100:1	545	P02HD15	HD345
0-2	30	1,000:1	100:1	650	P02HD30	HD355
0-2.5	12	1,000:1	100:1	545	P02.5HD12	HD345
0-2.5	24	1,000:1	100:1	650	P02.5HD24	HD355
0-3.5	8.5	1,000:1	100:1	545	P03.5HD8.5	HD345
0-3.5	17	1,000:1	100:1	650	P03.5HD17	HD355
0-5	6	10,000:1	100:1	610	P05HD6	HD345
0-5	12	10,000:1	100:1	720	P05HD12	HD355
0-7.5	4	10,000:1	100:1	610	P07.5HD4	HD345
0-7.5	8	10,000:1	100:1	720	P07.5HD8	HD355
0-10	3	10,000:1	1,000:1	610	P010HD3	HD345
0-10	6	10,000:1	100:1	720	P010HD6	HD355
0-12	2.5	10,000:1	1,000:1	610	P012HD2.5	HD345
0-12	5	10,000:1	100:1	720	P012HD5	HD355
0-15	2	10,000:1	1,000:1	650	P015HD2	HD345
0-15	4	10,000:1	100:1	760	P015HD4	HD355
0-18	1.6	10,000:1	1,000:1	650	P018HD1.6	HD345
0-18	3.2	10,000:1	1,000:1	760	P018HD3.2	HD355
0-20	1.5	10,000:1	1,000:1	760	P020HD1.5	HD345
0-20	3	10,000:1	1,000:1	870	P020HD3	HD355
0-22	1.3	10,000:1	1,000:1	760	P022HD1.3	HD345
0-22	2.6	10,000:1	1,000:1	870	P022HD2.6	HD355
0-25	1.2	10,000:1	1,000:1	870	P025HD1.2	HD345
0-25	2.4	10,000:1	1,000:1	975	P025HD2.4	HD355
0-30	1	10,000:1	1,000:1	870	P030HD1	HD345
0-30	2	10,000:1	1,000:1	975	P030HD2	HD355

<sup>\*</sup> Positive output is standard. For negative output, change first letter of model number from P to N.





### **DC-DC Converters**

Mini Encapsulated - **PC Board mounting** REGULATED

single & dual tracking outputs

- Shipped Within 3 Days
- One Year Warranty

These versatile DC-DC Converters are ideally suited for powering a wide variety of analog and digital circuitry, such as op amps, logic and microprocessors. They may be mounted directly on a printed circuit board for OEM applications, or installed in a socket for developmental and small quantity requirements. For DC-DC Converters with screw terminals, see pages 76 and 77.



Input Voltage: Nominal voltage  $\pm 10\%$ . Input Reflected Ripple: 1%  $E_{in}$  (max.)

Output Regulation: Line: ±0.02% Load: ±0.05%

Output Ripple (@ 25 MHz bandwidth):

1 mV rms, 50 mV p-p (5-15V outputs). 1.5 mV rms, 75 mV p-p (18-28V outputs).

**Output Voltage Setting:** Outputs are factory preset to within ±1% of the nominal output voltage.

**T/C terminal:** For single output models, the T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or – terminal. For dual output models, the T/C terminal is the output common.

**Polarity:** The output of single output models may be connected in either polarity. Dual output models have a positive/common/negative output terminal configuration.

Transient Response (NL-FL): 50 microseconds.

**Overload/Short Circuit Protection:** Electronic current limiting with automatic recovery. Models in case size ELC-10 also have thermal protection with automatic reset.

Input/Output Isolation:

Voltage: 500 Vdc

**Resistance:** 100 megohms **Capacitance:** 100 pF

Switching Frequency: 20 kHz minimum.

Temperature Coefficient: 0.02%/°C (Typical).

Ambient Operating Temperature: -20 to +71°C.

Storage Temperature: -40 to +85°C.

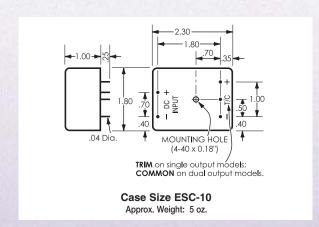
Humidity: 20% to 80% R.H. (non-condensing).

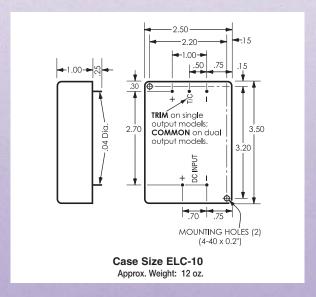
Mounting: May be mounted on printed circuit board or in

socket (see page 34).



Efficiency is in the order of 65%, and is maintained down to low levels of output current. Input reflected ripple is reduced to less than 1% by means of a standard built-in pi filter, and electrostatic shielding on all six sides minimizes radiated energy. High input/output isolation permits separation of the output from the dc input bus to minimize circuit interaction due to ground loops, and the use of inputs in either polarity.





# SINGLE OUTPUT, FOR PC BOARD MOUNTING

			LE (	DUTP	UI, I		
Nominal Input	Nominal Output		put Cu Imps. a		(\$)		Case
Voltage	Voltage	40°C	55°C	71°C	Price	Model	Size
5	5	1.25	1.25	1.00	98	5E5E125	ESC-10
5	5	2.50	2.25	2.00	119	5E5E250	ELC-10
5	6	1.00	1.00	.80	98	5E6E100	ESC-10
<u>5</u>	<u>6</u> 8	2.00 .75	1.80 .75	1.60 .60	119 98	5E6E200 5E8E75	ELC-10 ESC-10
5	8	1.50	1.35	1.20	119	5E8E150	ELC-10
5	9	.70	.70	.55	98	5E9E70	ESC-10
5	9	1.40	1.25	1.10	119	5E9E140	ELC-10
5	10	.65	.65	.50	98	5E10E65	ESC-10
<u>5</u>	10 12	1.30 .60	1.15 .60	1.00 .50	119 98	5E10E130 5E12E60	ELC-10 ESC-10
5	12	1.20	1.10	1.00	119	5E12E120	ELC-10
5	13	.55	.55	.45	98	5E13E55	ESC-10
5	13	1.10	1.00	.90	119	5E13E110	ELC-10
5	15	.50	.50	.40	98	5E15E50	ESC-10
<u>5</u>	15 18	1.00 .40	.90 .40	.80 .30	119 98	5E15E100 5E18E40	ELC-10 ESC-10
5	18	.80	.70	.60	119	5E18E80	ELC-10
5	20	.35	.35	.28	98	5E20E35	ESC-10
5	20	.70	.60	.50	119	5E20E70	ELC-10
5 5	24 24	.25 .60	.25 .55	.20 .50	98 119	5E24E25 5E24E60	ESC-10 ELC-10
5	28	.25	.25	.20	98	5E28E25	ESC-10
5	28	.50	.45	.40	119	5E28E50	ELC-10
12	5	1.25	1.25	1.00	98	12E5E125	ESC-10
12	5	2.50	2.25	2.00	119	12E5E250	ELC-10
12	6	1.00	1.00	.80	98	12E6E100	ESC-10
12	6	2.00	1.80	1.60	119	12E6E200	ELC-10
12 12	8 8	.75 1.50	.75 1.35	.60 1.20	98 119	12E8E75 12E8E150	ESC-10 ELC-10
12	9	.70	.70	.55	98	12E9E70	ESC-10
12	9	1.40	1.25	1.10	119	12E9E140	ELC-10
12	10	.65	.65	.50	98	12E10E65	ESC-10
12 12	10 12	1.30	1.15	1.00	119	12E10E130 12E12E60	ELC-10
12	12	.60 1.20	.60 1.10	.50 1.00	98 119	12E12E00 12E12E120	ESC-10 ELC-10
12	13	.55	.55	.45	98	12E13E55	ESC-10
12	13	1.10	1.00	.90	119	12E13E110	ELC-10
12	15	.50	.50	.40	98	12E15E50	ESC-10
12 12	15 18	1.00 .40	.90 .40	.80 .30	119 98	12E15E100 12E18E40	ELC-10 ESC-10
12	18	.80	.70	.60	119	12E18E80	ELC-10
12	20	.35	.35	.28	98	12E20E35	ESC-10
12	20	.70	.60	.50	119	12E20E70	ELC-10
12	24	.25	.25	.20	98	12E24E25	ESC-10
12 12	24 28	.60 .25	.55 .25	.50 .20	119 98	12E24E60 12E28E25	ELC-10 ESC-10
12	28	.50	.45	.40	119	12E28E50	ELC-10
15	5	1.25	1.25	1.00	98	15E5E125	ESC-10
15	5	2.50	2.25	2.00	119	15E5E250	ELC-10
15	6	1.00	1.00	.80	98	15E6E100	ESC-10
15	6	2.00	1.80	1.60	119	15E6E200	ELC-10
15 15	8 8	.75	.75	.60 1.20	98 119	15E8E75 15E8E150	ESC-10
15	9	1.50 .70	1.35 .70	.55	98	15E8E150 15E9E70	ELC-10 ESC-10
15	9	1.40	1.25	1.10	119	15E9E140	ELC-10
15	10	.65	.65	.50	98	15E10E65	ESC-10
15	10	1.30	1.15	1.00	119	15E10E130	ELC-10
15 15	12	.60	.60	.50	98	15E12E60	ESC-10
15 15	12 13	1.20 .55	1.10 .55	1.00 .45	119 98	15E12E120 15E13E55	ELC-10 ESC-10
15	13	1.10	1.00	.90	119	15E13E110	ELC-10
15	15	.50	.50	.40	98	15E15E50	ESC-10
15	15	1.00	.90	.80	119	15E15E100	ELC-10
15 15	18 18	.40 .80	.40 .70	.30 .60	98 119	15E18E40 15E18E80	ESC-10 ELC-10
10	10	I .60	ı ./u	.00	1119	13510500	ELU-10

No	minal	Nominal		put Cu				
	put Itage	Output Voltage	40°C	mps. a	1t 71°C	(\$) Price	Model	Case Size
	5	20	.35	.35	.28	98	15E20E35	ESC-10
	5	20	.70	.60	.50	119	15E20E33	ELC-10
	5	24	.25	.25	.20	98	15E24E25	ESC-10
	5	24	.60	.55	.50	119	15E24E60	ELC-10
	5 5	28 28	.25 .50	.25 .45	.20 .40	98 119	15E28E25 15E28E50	ESC-10 ELC-10
_	24	5	1.25	1.25	1.00	98	24E5E125	ESC-10
	.4 !4	5	2.50	2.25	2.00	119	24E5E125 24E5E250	ELC-10
2	24	6	1.00	1.00	.80	98	24E6E100	ESC-10
	24	6	2.00	1.80	1.60	119	24E6E200	ELC-10
	!4 !4	8 8	.75 1.50	.75 1.35	.60 1.20	98 119	24E8E75 24E8E150	ESC-10 ELC-10
	4	9	.70	.70	.55	98	24E9E70	ESC-10
	24	9	1.40	1.25	1.10	119	24E9E140	ELC-10
	24	10	.65	.65	.50	98	24E10E65	ESC-10
	<u>!4</u> !4	10 12	1.30 .60	1.15 .60	1.00 .50	119 98	24E10E130 24E12E60	ELC-10 ESC-10
	4	12	1.20	1.10	1.00	119	24E12E120	ELC-10
2	24	13	.55	.55	.45	98	24E13E55	ESC-10
	24	13	1.10	1.00	.90	119	24E13E110	ELC-10
	!4 !4	15 15	.50 1.00	.50 .90	.40 .80	98 119	24E15E50 24E15E100	ESC-10 ELC-10
	. <del>4</del> .4	18	.40	.40	.30	98	24E18E40	ESC-10
	4	18	.80	.70	.60	119	24E18E80	ELC-10
	24	20	.35	.35	.28	98	24E20E35	ESC-10
	24	20	.70 .25	.60	.50	119	24E20E70	ELC-10
	!4 !4	24 24	.60	.25 .55	.20 .50	98 119	24E24E25 24E24E60	ESC-10 ELC-10
	4	28	.25	.25	.20	98	24E28E25	ESC-10
2	24	28	.50	.45	.40	119	24E28E50	ELC-10
	.8	5	1.25	1.25	1.00	98	28E5E125	ESC-10
	18	5	2.50	2.25	2.00	119	28E5E250	ELC-10
	!8 !8	6 6	1.00 2.00	1.00 1.80	.80 1.60	98 119	28E6E100 28E6E200	ESC-10 ELC-10
	.8	8	.75	.75	.60	98	28E8E75	ESC-10
	18	8	1.50	1.35	1.20	119	28E8E150	ELC-10
	18	9	.70	.70	.55	98	28E9E70	ESC-10
	!8 !8	9 10	1.40 .65	1.25 .65	1.10 .50	119 98	28E9E140 28E10E65	ESC-10
	:0 !8	10	1.30	1.15	1.00	119	28E10E03	ELC-10
	18	12	.60	.60	.50	98	28E12E60	ESC-10
	.8	12	1.20	1.10	1.00	119	28E12E120	ELC-10
	18	13	.55	.55	.45	98	28E13E55	ESC-10
	!8 !8	13 15	1.10 .50	1.00 .50	.90 .40	119 98	28E13E110 28E15E50	ELC-10 ESC-10
	18	15	1.00	.90	.80	119	28E15E100	ELC-10
2	18	18	.40	.40	.30	98	28E18E40	ESC-10
	28	18	.80	.70	.60	119	28E18E80	ELC-10
	!8 !8	20 20	.35 .70	.35 .60	.28 .50	98 119	28E20E35 28E20E70	ESC-10 ELC-10
	28	24	.25	.25	.20	98	28E24E25	ESC-10
	.8	24	.60	.55	.50	119	28E24E60	ELC-10
	18	28	.25	.25	.20	98	28E28E25	ESC-10
_	.8	28	.50	.45	.40	119	28E28E50	ELC-10
	8 8	5 6	1.25	1.25	1.00 .80	98 98	48E5E125 48E6E100	ESC-10
	8	8	.75	.75	.60	98	48E8E75	ESC-10
	8	9	.70	.70	.55	98	48E9E70	ESC-10
	8	10	.65	.65	.50	98	48E10E65	ESC-10
	8	12	.60	.60	.50	98	48E12E60	ESC-10
	18 18	13 15	.55 .50	.55 .50	.45 .40	98 98	48E13E55 48E15E50	ESC-10 ESC-10
	8	18	.40	.40	.30	98	48E18E40	ESC-10
4	8	20	.35	.35	.28	98	48E20E35	ESC-10
	8	24	.25	.25	.20	98	48E24E25	ESC-10
	8	28	.25	.25	.20	98	48E28E25	ESC-10
120	to 180	See	pages	38-39.				

# **DUAL TRACKING OUTPUTS**

Nominal Input	Nominal Output	Amps. per Output at			(\$)		Case
Voltage	Voltages	40°C	55°C	71°C	Price	Model	Size
5	±10	.30	.30	.25	105	5E10D30	ESC-10
5	±10	.60	.55	.50	125	5E10D60	ELC-10
5	±12	.30	.30	.25	105	5E12D30	ESC-10
5	±12	.60	.55	.50	125	5E12D60	ELC-10
5	±15	.25	.25	.25	105	5E15D25	ESC-10
5	±15	.50	.45	.40	125	5E15D50	ELC-10
5	±18	.20	.20	.20	105	5E18D20	ESC-10
5	±18	.40	.35	.30	125	5E18D40	ELC-10
12	±10	.30	.30	.25	105	12E10D30	ESC-10
12	±10	.60	.55	.50	125	12E10D60	ELC-10
12	±12	.30	.30	.25	105	12E12D30	ESC-10
12	±12	.60	.55	.50	125	12E12D60	ELC-10
12	±15	.25	.25	.25	105	12E15D25	ESC-10
12	±15	.50	.45	.40	125	12E15D50	ELC-10
12	±18	.20	.20	.20	105	12E18D20	ESC-10
12	±18	.40	.35	.30	125	12E18D40	ELC-10
15	±10	.30	.30	.25	105	15E10D30	ESC-10
15	±10	.60	.55	.50	125	15E10D60	ELC-10
15	±12	.30	.30	.25	105	15E12D30	ESC-10
15	±12	.60	.55	.50	125	15E12D60	ELC-10
15	±15	.25	.25	.25	105	15E15D25	ESC-10
15	±15	.50	.45	.40	125	15E15D50	ELC-10

G OUTPUTS ————										
Nominal Input	Nominal Output	Amps	. per 0 at	utput	(\$)		Case			
Voltage	Voltages	40°C	55°C	71°C	Price	Model	Size			
15	±18	.20	.20	.20	105	15E18D20	ESC-10			
15	±18	.40	.35	.30	125	15E18D40	ELC-10			
24	±10	.30	.30	.25	105	24E10D30	ESC-10			
24	±10	.60	.55	.50	125	24E10D60	ELC-10			
24	±12	.30	.30	.25	105	24E12D30	ESC-10			
24	±12	.60	.55	.50	125	24E12D60	ELC-10			
24	±15	.25	.25	.25	105	24E15D25	ESC-10			
24	±15	.50	.45	.40	125	24E15D50	ELC-10			
24	±18	.20	.20	.20	105	24E18D20	ESC-10			
24	±18	.40	.35	.30	125	24E18D40	ELC-10			
28	±10	.30	.30	.25	105	28E10D30	ESC-10			
28	±10	.60	.55	.50	125	28E10D60	ELC-10			
28	±12	.30	.30	.25	105	28E12D30	ESC-10			
28	±12	.60	.55	.50	125	28E12D60	ELC-10			
28	±15	.25	.25	.25	105	28E15D25	ESC-10			
28	±15	.50	.45	.40	125	28E15D50	ELC-10			
28	±18	.20	.20	.20	105	28E18D20	ESC-10			
28	±18	.40	.35	.30	125	28E18D40	ELC-10			
48	±10	.30	.30	.25	105	48E10D30	ESC-10			
48	±12	.30	.30	.25	105	48E12D30	ESC-10			
48	±15	.25	.25	.25	105	48E15D25	ESC-10			
48	±18	.20	.20	.20	105	48E18D20	ESC-10			
48	±18	.20	.20	.20	105	48E18D20	ESC-10			



## **DC-DC Converters**

Mini Encapsulated - **with screw terminals** REGULATED

single & dual tracking outputs

- Shipped Within 3 Days
- One Year Warranty

These DC-DC Converters have the versatility to be used in a broad range of applications. Threaded mounting holes permit them to be mounted to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. Screw terminals provide easy connection without sockets or soldering.



Input/output isolation prevents ground loops, and permits the use of inputs of either polarity; outputs of single output models may be used in either polarity and floated up to 500 volts above the input. Short circuit and thermal protection, and rugged encapsulated construction, assure years of reliable service.

#### **SPECIFICATIONS**

Input Voltage: Nominal voltage ±10%.
Input Reflected Ripple: 1% E<sub>in</sub> (max.)
Output Ripple (@25 MHz bandwidth):
1 mV rms, 50 mV p-p (5-15V outputs).
1.5 mV rms, 75 mV p-p (18-28V outputs).

**Output Voltage Setting:** Outputs are factory preset to within ±1% of the nominal output voltage.

**T/C terminal:** For single output models, the T/C terminal can be used to trim the output more precisely to the nominal voltage rating by connecting an external resistor from the T/C terminal to either the + or – terminal. For dual output models, the T/C terminal is the output common.

**Polarity:** The output of single output models may be connected in either polarity. Dual output models have a positive/common/negative output terminal configuration.

Transient Response (NL-FL): 50 microseconds.

**Overload/Short Circuit Protection:** Electronic current limiting with automatic recovery. All models have thermal protection with automatic reset.

#### Input/Output Isolation:

Voltage: 500 Vdc

Resistance: 100 megohms Capacitance: 100 pF

Switching Frequency: 20 kHz minimum.

Temperature Coefficient: 0.02%/°C (Typical).

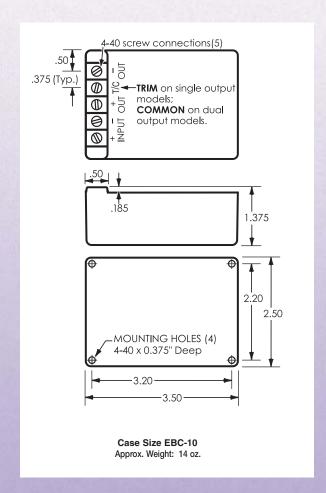
Ambient Operating Temperature: -20 to +71°C.

Storage Temperature: -40 to +85°C.

Humidity: 20% to 80% R.H. (non-condensing).

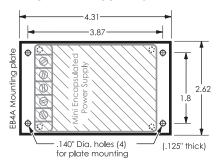
Case Size: EBC-10.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket, or they may be used on a test bench or tabletop. When wall-mounting or DIN rail mounting is desired, use accessory Mounting Kits on page 77.



**ACCESSORY MOUNTING KITS** For use with 'Mini Encapsulated - with Screw Terminals' power supplies.

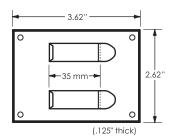
#### FOR WALL MOUNTING



Use Mounting Kit EB4A to mount from the power supply side of the mounting surface, necessary when the other side of the mounting surface is inaccessible. This kit consists of an aluminum plate and four screws for attaching it to the power supply, effectively adding mounting flanges to any Mini Encapsulated power supply with screw terminals or any Mini DC-DC Converter with screw terminals.

Model EB4A . . . . . . . . . \$ 8

#### FOR DIN RAIL MOUNTING



Mounting Kit EB35DIN consists of an aluminum plate, with two DIN clips attached to it, and four screws for attaching the plate to the bottom of any Mini Encapsulated power supply with screw terminals or any Mini DC-DC Converter with screw terminals. The power supply can then be snapped onto a 35mm 'top hat' type of DIN rail.

Model EB35DIN . . . . . . . . \$12

- SINGLE OUTPUT, WITH SCREW TERMINALS -

SINGLE OUTPUT, WIT									
Nominal Input	Nominal Output	À	ut Cur nps. at	1	Regula	tion	(\$)		
Voltage	Voltage	40°C	55°C	71°C	Load ±%	Line ±%	Price	Model	
5	5	2.50	2.25	2.00	.15	.02	129	5EB5E250	
5	6	2.00	1.80	1.60	.15	.02	129	5EB6E200	
5	8	1.50	1.35	1.20	.10	.02	129	5EB8E150	
5	9	1.40	1.25	1.10	.10	.02	129	5EB9E140	
5	10	1.30	1.15	1.00	.10	.02	129	5EB10E130	
5	12	1.20	1.10	1.00	.05	.02	129	5EB12E120	
5	13	1.10	1.00	.90	.05	.02	129	5EB13E110	
5	15	1.00	.90	.80	.05	.02	129	5EB15E100	
5	18	.80	.70	.60	.05	.02	129	5EB18E80	
5	20	.70	.60	.50	.05	.02	129	5EB20E70	
5	24	.60	.55	.50	.05	.02	129	5EB24E60	
5	28	.50	.45	.40	.05	.02	129	5EB28E50	
12	5	2.50	2.25	2.00	.15	.02	129	12EB5E250	
12	6	2.00	1.80	1.60	.15	.02	129	12EB6E200	
12	8	1.50	1.35	1.20	.10	.02	129	12EB8E150	
12	9	1.40	1.25	1.10	.10	.02	129	12EB9E140	
12	10	1.30	1.15	1.00	.10	.02	129	12EB10E130	
12	12	1.20	1.10	1.00	.05	.02	129	12EB12E120	
12	13	1.10	1.00	.90	.05	.02	129	12EB13E110	
12	15	1.00	.90	.80	.05	.02	129	12EB15E100	
12	18	.80	.70	.60	.05	.02	129	12EB18E80	
12	20	.70	.60	.50	.05	.02	129	12EB20E70	
12	24	.60	.55	.50	.05	.02	129	12EB24E60	
12	28	.50	.45	.40	.05	.02	129	12EB28E50	
15	5	2.50	2.25	2.00	.15	.02	129	15EB5E250	
15	6	2.00	1.80	1.60	.15	.02	129	15EB6E200	
15	8	1.50	1.35	1.20	.10	.02	129	15EB8E150	
15	9	1.40	1.25	1.10	.10	.02	129	15EB9E140	
15	10	1.30	1.15	1.00	.10	.02	129	15EB10E130	
15	12	1.20	1.10	1.00	.05	.02	129	15EB12E120	

Nominal Input	Nominal Output		ut Cur nps. a		Regula	ition	(\$)	
Voltage	Voltage	40°C	55°C	71°C	Load ±%	Line ±%	Price	Model
15	13	1.10	1.00	.90	.05	.02	129	15EB13E110
15	15	1.00	.90	.80	.05	.02	129	15EB15E100
15	18	.80	.70	.60	.05	.02	129	15EB18E80
15	20	.70	.60	.50	.05	.02	129	15EB20E70
15	24	.60	.55	.50	.05	.02	129	15EB24E60
15	28	.50	.45	.40	.05	.02	129	15EB28E50
24	5	2.50	2.25	2.00	.15	.02	129	24EB5E250
24	6	2.00	1.80	1.60	.15	.02	129	24EB6E200
24	8	1.50	1.35	1.20	.10	.02	129	24EB8E150
24	9	1.40	1.25	1.10	.10	.02	129	24EB9E140
24	10	1.30	1.15	1.00	.10	.02	129	24EB10E130
24	12	1.20	1.10	1.00	.05	.02	129	24EB12E120
24	13	1.10	1.00	.90	.05	.02	129	24EB13E110
24	15	1.00	.90	.80	.05	.02	129	24EB15E100
24	18	.80	.70	.60	.05	.02	129	24EB18E80
24	20	.70	.60	.50	.05	.02	129	24EB20E70
24	24	.60	.55	.50	.05	.02	129	24EB24E60
24	28	.50	.45	.40	.05	.02	129	24EB28E50
28	5	2.50	2.25	2.00	.15	.02	129	28EB5E250
28	6	2.00	1.80	1.60	.15	.02	129	28EB6E200
28	8	1.50	1.35	1.20	.10	.02	129	28EB8E150
28	9	1.40	1.25	1.10	.10	.02	129	28EB9E140
28	10	1.30	1.15	1.00	.10	.02	129	28EB10E130
28	12	1.20	1.10	1.00	.05	.02	129	28EB12E120
28	13	1.10	1.00	.90	.05	.02	129	28EB13E110
28	15	1.00	.90	.80	.05	.02	129	28EB15E100
28	18	.80	.70	.60	.05	.02	129	28EB18E80
28	20	.70	.60	.50	.05	.02	129	28EB20E70
28	24	.60	.55	.50	.05	.02	129	28EB24E60
28	28	.50	.45	.40	.05	.02	129	28EB28E50
120 to 180		See	pages	38-39	9.			

DUAL TRACKING OUTPUTS -

Nominal Input	Nominal Output	Amps. per Output at		Regula	ition	(\$)		
Voltage	Voltages	40°C	55°C	71°C	Load ±%	Line ±%	Price	Model
5	±10	.60	.55	.50	.05	.02	135	5EB10D60
5	±12	.60	.55	.50	.05	.02	135	5EB12D60
5	±15	.50	.45	.40	.05	.02	135	5EB15D50
5	±18	.40	.35	.30	.05	.02	135	5EB18D40
12	±10	.60	.55	.50	.05	.02	135	12EB10D60
12	±12	.60	.55	.50	.05	.02	135	12EB12D60
12	±15	.50	.45	.40	.05	.02	135	12EB15D50
12	±18	.40	.35	.30	.05	.02	135	12EB18D40
15	±10	.60	.55	.50	.05	.02	135	15EB10D60
15	±12	.60	.55	.50	.05	.02	135	15EB12D60

Nominal Input	Nominal Output	Amps. per Output at			Regula	ition	(\$)	
Voltage	Voltages	40°C	55°C	71°C	Load ±%	Line ±%	Price	Model
15 15	±15 ±18	.50 .40	.45 .35	.40 .30	.05 .05	.02 .02	135 135	15EB15D50 15EB18D40
24 24 24 24	±10 ±12 ±15 ±18	.60 .60 .50	.55 .55 .45 .35	.50 .50 .40 .30	.05 .05 .05 .05	.02 .02 .02 .02	135 135 135 135	24EB10D60 24EB12D60 24EB15D50 24EB18D40
28 28 28 28	±10 ±12 ±15 ±18	.60 .60 .50 .40	.55 .55 .45 .35	.50 .50 .40 .30	.05 .05 .05 .05	.02 .02 .02 .02	135 135 135 135	28EB10D60 28EB12D60 28EB15D50 28EB18D40



# **Narrow Profile**

# **DC-DC Converters (to 288 watts)**

REGULATED wide input ranges single output

- Shipped Within 3 Days
- Five Year Warranty



These state-of-the-art DC-DC converters combine excellent regulation and ripple specifications with broad input ranges. They are available in a large selection of

output voltages and current ratings. Accessory mounting kits permit easy installation on a vertical panel, wall or on a DIN rail.

#### STANDARD FEATURES

- Tight regulation, low ripple
- · Extensive filtering and shielding
- · Output status indicator
- Input/output isolation exceeds 2828Vdc
- Extruded aluminum case

#### **SPECIFICATIONS**

Nominal Input	Operating Input Voltage Range
24 Vdc	18-36 Vdc (or 18-75 Vdc; see table)
48 Vdc	36-75 Vdc (or 18-75 Vdc; see table)
125 Vdc	110-350 Vdc (see table)
250 Vdc	110-350 Vdc (see table)

**Input Reverse Polarity Protection:** Internal shunt diode (external fuse required).

Startup Time: 800 mS typical.

Regulation:

Line: ±0.05% Load: ±0.05%

**Output Voltage Remote Adjustment:** The output voltage may be controlled by means of an external 1K potentiometer.

Output Indicator (DC out): Green LED.

**Polarity:** Output is floating and may be used in either polarity.

**Drift:** ±0.1% typical over 8 hours, after 30 minute warmup.

Temperature Coefficient: ±0.02%/°C (Typical).

Transient Response: 300  $\mu$ S to return to  $\pm 1\%$  of output setting. Maximum of  $\pm 3\%$  output excursion following a load step change from 50% to 100%.

**Remote Sensing:** Compensates up to 0.5 volt drop per output line, within the limits of the output voltage adjustment range.

**Overload/Short Circuit Protection:** Current limiting with automatic recovery.

**Overvoltage Protection:** 

Case sizes DN6A, DN6B: automatic reset.

Case sizes DN8, DN8A: latches power supply OFF, reset by momentarily removing DC input power.

Output Inhibit (DN8 and DN8A case sizes only):

Applying between +3 and +25 Vdc (relative to the -Out terminal) to the inhibit terminal will disable the supply.

**EMI:** Designed to meet FCC Part 15 and EN55022, Class A.

#### **Thermal Protection:**

Case sizes DN8, DN8A, DN6A: thermostat, self-resetting. Case size DN6B: inherently protected.

**Efficiency:** (Typical, at nominal input voltage, with full load.) 65 to 80%

Ambient Operating Temperature: 0 to +71°C.

Storage Temperature: -40 to +85°C.

**Cooling:** Case sizes DN8, DN8A, DN6A: forced-air cooled; air enters rear of power supply and exits from top. Case size DN6B: convection cooled.

Switching Frequency: 100 kHz (Typical).

**Dielectric Withstand Voltage:** 

	inputs to 75 Vdc	110-350 Vdc input	Isolation
Input to output:	2828 Vdc	4242 Vdc	707 Vdc
Input to case:	2828 Vdc	2121 Vdc	707 Vdc
Output to case:	750 Vdc	750 Vdc	424 Vdc

Drawings: See page 80.

**Mounting:** Threaded mounting holes permit mounting to a chassis, cabinet wall or bracket. To mount from the power supply side of the mounting surface or for DIN rail mounting, see accessory Mounting Kits on page 91.

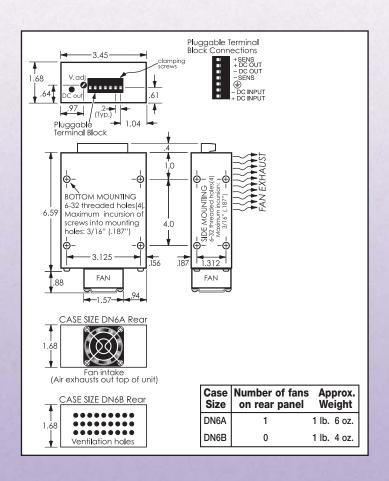
#### **Narrow Profile DC-DC CONVERTERS**

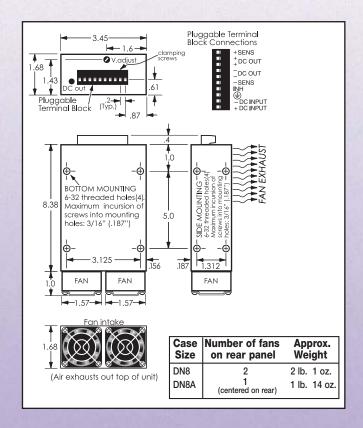
Nominal	Adjust	Output	Current	Rinn	le mV			36 Vdc Input	1	o 75 Vdc Input		75 Vdc Input	110 +	o 350 Vdc Input *
Output	Range	Amp	s. at		/Hz BW)	Case	-			· ·		· · · · · · · · · · · · · · · · · · ·	<u> </u>	•
Voltage	± V	40°C	71°C	RMS	P-P	Size	Price (\$)	Model	Price (\$)	Model	Price (\$)	Model	Price (\$)	Model
3.3 3.3	.5 .5	10 15	7 10.5	10 10	50 50	DN6B DN6A	185 225	24C3.3FT1000 24C3.3FT1500	185 225	48C3.3FT1000 48C3.3FT1500				
3.3 3.3	.5 .5	18.5 25	12.9 17.5	10 10	50 50	DN8A DN8		>		>	275	18-75C3.3NT1850	275 350	230C3.3NT1850 230C3.3NT2500
5	.5	10	7	10	50	DN6B	185	24C5FT1000	185	48C5FT1000				*
5 5	.5 .5	15 18.5	10.5 12.9	10 10	50 50	DN6A DN8A	225	24C5FT1500	225	48C5FT1500 >	275	18-75C5NT1850	275	230C5NT1850
5	.5	25	17.5	10	50	DN8							350	230C5NT2500
6 6	.5 .5	8.5 12.5	6 8.6	10 10	50 50	DN6B DN6A	185 225	24C6FT850 24C6FT1250	185 225	48C6FT850 48C6FT1250				*
6 6	.5 .5	15.4 24	10.7 16.8	10 10	50 50	DN8A DN8		>		>	275	18-75C6NT1540	275 350	230C6NT1540 230C6NT2400
7	.5	7	4.9	10	50	DN6B	185	24C7FT700	185	48C7FT700				*
7 7	.5 .5	10.6 15	7.4 10.5	10 10	50 50	DN6A DN8A	225	24C7FT1060	225	48C7FT1060 >	275	18-75C7NT1500	275	230C7NT1500
7	.5	23	16.1	10	50	DN8							350	230C7NT2300
8 8	.5 .5	6 9.4	4.2 6.6	15 15	100 100	DN6B DN6A	185 225	24C8FT600 24C8FT940	185 225	48C8FT600 48C8FT940				*
8 8	.5 .5	14.7 23	10.3 16.1	15 15	100 100	DN8A DN8		<del>&gt;</del>		>	275	18-75C8NT1470	275 350	230C8NT1470 230C8NT2300
9	.5	5.5	3.8	15	100	DN6B	185	24C9FT550	185	48C9FT550				*
9	.5 .5	9.3 14.4	6.5 10	15 15	100 100	DN6A DN8A	225	24C9FT930	225	48C9FT930	275	18-75C9NT1440	275	230C9NT1440
9	.5	23	16.1	15	100	DN8							350	230C9NT2300
10 10	.5 .5	5 9.2	3.5 6.4	15 15	100 100	DN6B DN6A	185 225	24C10FT500 24C10FT920	185 225	48C10FT500 48C10FT920				*
10	.5	14.1	9.8	15	100	DN8A		>		>	275	18-75C10NT1410	275	230C10NT1410
10	.5 .5	22 4.5	15.4 3.1	15 15	100	DN8 DN6B	185	24C12FT450	185	48C12FT450			350	230C10NT2200 *
12	.5	9.1	6.3	15	100	DN6A	225	24C12FT910	225	48C12FT910				
12 12	.5 .5	13.7 22	9.6 15.4	15 15	100 100	DN8A DN8		<del></del> >		<del></del> >	275	18-75C12NT1370	275 350	230C12NT1370 230C12NT2200
13	.5	4.3	3	15	100	DN6B	185	24C13FT430	185	48C13FT430				*
13 13	.5 .5	8.1 12.3	5.6 8.6	15 15	100 100	DN6A DN8A	225	24C13FT810 >	225	48C13FT810 >	275	18-75C13NT1230	275	230C13NT1230
13	.5	20	14	15	100	DN8							350	230C13NT2000
14 14	.5 .5	4.2 7.7	3 5.4	15 15	100 100	DN6B DN6A	185 225	24C14FT420 24C14FT770	185 225	48C14FT420 48C14FT770				*
14 14	.5 .5	11.7 19	8.2 13.3	15 15	100 100	DN8A DN8		<del>&gt;</del>		<del>&gt;</del>	275	18-75C14NT1170	275 350	230C14NT1170 230C14NT1900
15	.5	4	2.8	15	100	DN6B	185	24C15FT400	185	48C15FT400				*
15 15	.5 .5	7.4 11.1	5.2 7.8	15 15	100 100	DN6A DN8A	225	24C15FT740	225	48C15FT740	275	18-75C15NT1110	275	230C15NT1110
15	.5	18	12.6	15	100	DN8							350	230C15NT1800
18 18	.5 .5	3.3 6	2.3 4.2	15 15	100 100	DN6B DN6A	185 225	24C18FT330 24C18FT600	185 225	48C18FT330 48C18FT600				*
18	.5	9.2	6.4	15	100	DN8A		>		>	275	18-75C18NT920	275	230C18NT920
20	.5	15 3	10.5	15 15	100	DN8 DN6B	185	24C20FT300	185	48C20FT300			350	230C18NT1500 *
20	.5	5.6	3.9	15	100	DN6A	225	24C20FT560	225	48C20FT560	075	18-75C20NT860	075	
20 20	.5 .5	8.6 14	9.8	15 15	100 100	DN8A DN8		>		>	275		275 350	230C20NT860 230C20NT1400
24	.5	2.5	1.8	15	100 100	DN6B	185	24C24FT250	185	48C24FT250				*
24 24	.5 .5	5 7.5	3.5 5.3	15 15	100	DN6A DN8A	225	24C24FT500 >	225	48C24FT500 >	275	18-75C24NT750	275	230C24NT750
24	.5	12 2.4	8.4 1.6	15 15	100	DN8 DN6B	185	24C25FT240	185	48C25FT240			350	230C24NT1200
25	.5	4.8	3.3	15	100	DN6A	225	24C25FT480	225	48C25FT480				*
25 25	.5 .5	7.2 11.2	5 7.8	15 15	100 100	DN8A DN8		<del></del> >		>	275	18-75C25NT720	275 350	230C25NT720 230C25NT1120
28	.5	2.1	1.5	15	100	DN6B	185	24C28FT210	185	48C28FT210				*
28 28	.5 .5	4.2 6.2	2.9 4.3	15 15	100 100	DN6A DN8A	225	24C28FT420 >	225	48C28FT420 >	275	18-75C28NT620	275	230C28NT620
28	.5	10	7	15	100	DN8							350	230C28NT1000
30 30	.5 .5	2 4	1.4 2.8	25 25	150 150	DN6B DN6A	185 225	24C30FT200 24C30FT400	185 225	48C30FT200 48C30FT400				*
30 30	.5 .5	5.6 9	3.9 6.3	25 25	150 150	DN8A DN8		<del>&gt;</del>		<del>&gt;</del>	275	18-75C30NT560	275 350	230C30NT560 230C30NT900
32	1	1.9	1.3	25	150	DN6B	185	24C32FT190	185	48C32FT190				*
32 32	1	3.7 5.4	2.5 3.7	25 25	150 150	DN6A DN8A	225	24C32FT370 >	225	48C32FT370 >	275	18-75C32NT540	275	230C32NT540
32	1	8.6	6	25	150	DN8							350	230C32NT860
36 36	1	1.7 3.3	1.2 2.3	25 25	150 150	DN6B DN6A	185 225	24C36FT170 24C36FT330	185 225	48C36FT170 48C36FT330				*
36	1	5	3.5	25	150	DN8A		>		>	275	18-75C36NT500	275	230C36NT500
36 40	1	8 1.5	5.6 1	25 25	150 150	DN8 DN6B	185	24C40FT150	185	48C40FT150			350	230C36NT800 *
40	1	3	2.1	25 25	150	DN6A	225	24C40FT300	225	48C40FT300	275	18-75C40NT420	275	
40 40	1	4.3 7	3 4.9	25 25	150 150	DN8A DN8		>		>	275	18-75C40NT430	275 350	230C40NT430 230C40NT700
48 48	1	1.2 2.5	.8 1.7	25 25	150 150	DN6B DN6A	185 225	24C48FT120 24C48FT250	185 225	48C48FT120				*
48	1	3.7	2.6	25	150	DN8A		>		48C48FT250 >	275	18-75C48NT370	275	230C48NT370
48	1	6	4.2	25	150	DN8		Coo nove					350	230C48NT600
50 to 125								See next	page!					

<sup>\*</sup> See pages 38-39 for information on Mini Switching Power Supplies that will operate on a 120-180 Vdc input and provide 30 and 50 watt DC outputs.

#### Narrow Profile DC-DC CONVERTERS (continued)

Nominal Output	Adjust Range	Output Amp			le mV /IHz BW)	Case	18 to 36 Vdc Input		36 t	o 75 Vdc Input	18 to	o 75 Vdc Input	110 to 350 Vdc Input	
Voltage	± V	40°C	71°C	RMS	P-P	Size	Price (\$)	Model	Price (\$)	Model	Price (\$)	Model	Price (\$)	Model
50 50	1	3.3 5	2.3 3.5	50 50	150 150	DN8A DN8							275 350	230C50NT330 230C50NT500
55 55	1	3 4.5	2.1 3.2	50 50	150 150	DN8A DN8							275 350	230C55NT300 230C55NT450
60 60	1	2.8 4.2	1.9 2.9	50 50	150 150	DN8A DN8							275 350	230C60NT280 230C60NT420
70 70	1	2.4 3.6	1.7 2.5	67 67	200 200	DN8A DN8							275 350	230C70NT240 230C70NT360
75 75	1	2.2 3.3	1.5 2.3	67 67	200 200	DN8A DN8							275 350	230C75NT220 230C75NT330
80 80	1	2.1 3.1	1.4 2.2	67 67	200 200	DN8A DN8							275 350	230C80NT210 230C80NT310
90 90	1	1.8 2.8	1.3 1.9	100 100	300 300	DN8A DN8							275 350	230C90NT180 230C90NT280
100 100	1	1.7 2.5	1.2 1.8	150 150	450 450	DN8A DN8							275 350	230C100NT170 230C100NT250
110 110	1	1.5 2.3	1.1 1.6	150 150	450 450	DN8A DN8							275 350	230C110NT150 230C110NT230
120 120	1 1	1.4 2.1	1 1.5	150 150	450 450	DN8A DN8							275 350	230C120NT140 230C120NT210
125 125	1	1.3 2	0.9 1.4	150 150	450 450	DN8A DN8							275 350	230C125NT130 230C125NT200





# Plug-in Power Supplies: pages 81 thru 88

#### MIL TESTED and EXTENDED TEMP RANGE

(for Plug-in models on pages 84-87)

SHIPPED WITHIN 3 DAYS
ALL MODELS U.L. RECOGNIZED

Ruggedized construction and capability for operation through an extended ambient temperature range of –20 to +71°C (without derating) are provided by Acopian MIL-option supplies. In all other respects they are identical to our standard Plug-in power supplies.

#### **HOW TO ORDER:**

Add prefix "MIL-" to standard model number and \$15.00 to price of single output models; \$30.00 to price of dual output models. Example: Model 6J200 becomes MIL-6J200. Price becomes \$175.00 plus \$15.00; or \$190.00 total.

MIL-option equivalents to all the models included on pages 84 through 87, except those housed in case size HS, have been tested to these specifications:

**ALTITUDE:** MIL-STD-810B, Method 500, Procedure II. **VIBRATION:** MIL-STD-810B, Method 514, Procedure I, Curve D.

**SHOCK:** MIL-STD-810B, Method 516, Procedure I. **FUNGUS:** (additional \$25.00/output charge applies.) MIL-STD-810B, Method 508, Procedure I.

**CONDUCTED EMI:** MIL-I-6181D, Paragraph 4.3.1., Figure II.

RADIATED EMI: MIL-I-6181D, Paragraph 4.3.2.

SUSCEPTIBILITY TO CONDUCTED AND RADIATED EMI: MIL-I-6181D, Paragraph 4.3.4.

**HIGH TEMPERATURE:** MIL-STD-810B, Method 501, Procedure I.

**LOW TEMPERATURE:** MIL-E-5272C, Paragraph 4.2.2,

Procedure II.

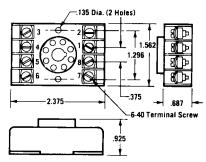
**HUMIDITY:** MIL-STD-810B, Method 507, Procedure I. **SALT FOG:** MIL-STD-810B, Method 509, Procedure I.

## **ACCESSORY SOCKETS**

(for Plug-in models on pages 82-88)

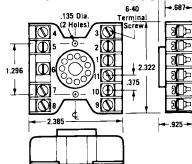
RETMA-numbered screw-type terminals simplify wiring and permit the use of wire terminals or bare wire, 12 to 20 gauge. Rated at 300 volts RMS, 10 Amp.

#### **FOR 8-PIN PLUGS**



Model SL608..... \$10

#### **FOR 11-PIN PLUGS**



Model SL611......\$15



# Plug-in UNREGULATED

AC-DC

single output & wide adjust output

- Shipped Within 3 Days
- U.L. Recognized
- Five Year Warranty

To meet the need for unregulated DC power at low cost, Acopian offers a broad line of both fixed and fully adjustable Plug-in power modules with output voltages to 950 volts.



There is no need to use tiedown hardware unless it is mounted in other than an upright position, or where shock and vibration will be encountered.

#### STANDARD FEATURES

- · Capacitive filtering
- Fused input
- · May be used in series or parallel
- · No derating or heat sinking required
- · Completely serviceable

#### **SPECIFICATIONS**

Input Voltage: 0-125 VAC, 50-400 Hz, single phase.

**Output Voltage Adjustment:** Adjustable voltage models are provided with a built-in continuously adjustable autotransformer.

**Load Regulation:** The nominal output voltages of fixed output models, and the maximum rated output voltages for models with adjustable outputs, are based on 115 VAC input with approximately one-half load. At no load, they will increase by approximately 10%. At full load, they will be reduced by approximately 10%.

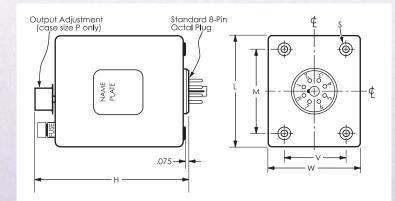
**Line Regulation:** Output voltage change due to line change directly proportional to input change.

**Polarity:** Output is floating; either positive or negative terminal may be grounded.

Ambient Operating Temperature: -10 to  $+65^{\circ}$ C. No derating required.

Storage Temperature: -55 to +85°C.

**Installation:** Plugs into standard 8-pin octal socket (see page 81). Four 6-32 mounting holes (on case sizes G and K) or four 10-32 mounting studs (on case sizes Q and P) are provided in the base for fastening the module when used in other than the upright position, or if extreme vibration will be encountered.



L	w	н	М	V	S	Approx. Weight
3.40	3.28	5.12	2.625	2.625	Four 6-32 x .25" deep mounting holes	2 lb. 8 oz.
4.15	3.33	5.21	2.750	2.562	Four 6-32 x .25" deep mounting holes	4 lb. 4 oz.
4.15	3.33	7.12	2.750	2.562	Four 10-32 x <sup>9</sup> / <sub>16</sub> " long mounting studs	7 lb.
4.15	3.33	7.25	2.750	2.562	Four 10-32 x <sup>9</sup> / <sub>16</sub> " long mounting studs	5 lb.
	3.40 4.15 4.15 4.15			L         W         H         M           3.40         3.28         5.12         2.625           4.15         3.33         5.21         2.750           4.15         3.33         7.12         2.750           4.15         3.33         7.25         2.750		

**PIN CONNECTIONS:** 







#### **OPTIONS**

**230 Volt Input:** Provision for inputs of 0-250 VAC, 50-400 Hz, replacing the standard of 0-125 VAC input voltage range, is available on single output models. To order, add suffix "-230" to model number and \$25.00 to price. The "-230" option requires two additional days.



#### **SINGLE OUTPUT**

Nominal Output Voltage	Output Current Amps.	Ripple Volts RMS	(\$) Price	Model	Case Size
7	1.0	.8	\$115	7U100	G
13 13	.600 3.0	.5 1.5	\$115 \$150	13U60 13U300	G K
14	1.0	.7	\$115	14U100	G
16	1.0	.7	\$115	16U100	G
18	1.0	.7	\$115	18U100	G
20	3.0	2.3	\$150	20UP300	K
24	1.0	1.7	\$115	24U100	G
24	3.0	2.2	\$150	24UP300	K
28	1.0	1.7	\$115	28U100	G
28	3.0	2.7	\$150	28UP300	K
32	.400	.6	\$115	32U40	G
41	.400	.6	\$115	41U40	G
45	1.0	1.6	\$125	45UP100	G
48	.400	.6	\$120	48U40	G
50	1.0	1.6	\$125	50UP100	G
52	.400	.6	\$120	52U40	G
55	.250	.4	\$120	55U25	G
80	.300	1	\$125	80UP30	G
90	.300	2.2	\$135	90UP30	G
100	.200	1	\$135	100UP20	G
110	.200	1	\$135	110UP20	G
120	.200	1	\$135	120UP20	G
140	.200	2	\$135	140UP20	G
150	.200	2	\$135	150UP20	G
165	.200	2	\$135	165UP20	G
170	.200	2	\$140	170UP20	G
180	.200	2	\$140	180UP20	G
200	.200	2	\$140	200UP20	G
250	.200	4	\$140	250UP20	G
275	.100	3	\$135	275UP10	G
340	.100	3	\$135	340UP10	G
360	.100	3	\$135	360UP10	G
370	.100	3	\$135	370UP10	G
420	.100	6.7	\$135	420UP10	G
475	.020	3.1	\$125	475U02	G
580*	.020	3.1	\$125	580U02	G
750*	.020	3.1	\$135	750U02	G
900*	.020	5	\$140	900U02	G

<sup>\*</sup>Not U.L. recognized when this catalog was published.

## **SINGLE OUTPUT - for relays**

Nominal Output Voltage	Output Current Amps.	Output Voltage N/L-F/L			Ripple Volts RMS	(\$) Price	Model	Case Size
6	2.0	7.7	to	4.8	2.0	\$115	US6	G
6	5.0	7.6	to	5.0	2.5	\$150	UP6	K
12	1.5	14.9	to	10.9	2.5	\$115	US12	G
12	5.0	14.8	to	10.0	2.5	\$150	UP12	K
24	1.5	26.2	to	20.2	2.5	\$115	US24	G
24	3.5	26.0	to	21.0	2.0	\$150	UP24	K
24	5.0	26.6	to	20.0	3.2	\$160	U24	Q
28	1.0	30.6	to	25.5	2.0	\$120	US28	G
28	3.0	30.8	to	26.0	2.0	\$150	UP28	K
28	5.0	31.9	to	23.6	3.4	\$160	U28	Q
48	0.5	54.0	to	42.0	1.3	\$120	US48	G

#### **WIDE ADJUST OUTPUT**

Output Voltage Range	Output Current Amps.	Ripple Volts RMS	(\$) Price	Model	Case Size
0-14	1.0	1	\$270	14UA100	Р
0-54	1.0	1.6	\$270	54UA100	Р
0-95	.300	2.2	\$270	95UA30	Р
0-125	.200	1.5	\$270	125UA20	Р
0-220	.200	2	\$270	220UA20	Р
0-260	.200	4	\$270	260UA20	Р
0-370	.100	3	\$270	370UA10	Р
0-450	.100	6.7	\$270	450UA10	Р
0-500	.020	3.1	\$270	500UA02	Р
0-800*	.020	3.1	\$270	800UA02	Р
0-950*	.020	5	\$270	950UA02	Р

<sup>\*</sup>Not U.L. recognized when this catalog was published.

(See page 57 for other unregulated wide adjust output power supplies.)





# Plug-in SINGLE OUTPUT & WIDE ADJUST OUTPUT

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- Five Year Warranty

An Acopian Plug-in power module can be installed in a matter of seconds. Simply plug it into a standard octal socket. (Threaded mounting holes are provided in the base for fastening the module when used in other than the upright position, or if subject to extreme vibration.) To replace a module - for example, where added circuitry calls for a higher current rating - just unplug the old, plug in the new. And as a result of years of product refinement, your Acopian Plug-in provides the highest reliability of any available series-regulated power supply.

#### STANDARD FEATURES

- · May be used in series
- Delivers current surges without damage to protect against prolonged overload and shorts, use of an input fuse is recommended
- No derating or additional heat sinking required
- · Completely serviceable
- Lightweight

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Specifications: See table.

**Polarity:** Output floating; either positive or negative terminal may be grounded or floated up to 300 volts above ground.

Temperature Coefficient: 0.02%/°C (Typical).

**Ambient Operating Temperature:** –10 to +65°C. No derating required.

**MIL Tested and Extended Temperature Range:** See page 81.

Storage Temperature: -55 to +85°C.

**Installation:** Plugs into standard 8-pin octal socket (see page 81). Four mounting holes (6-32) are provided in the base for fastening the module when used in other than the upright position, or if extreme vibration will be encountered.

PIN CONNECTIONS:

AC INPUT

+ OUT

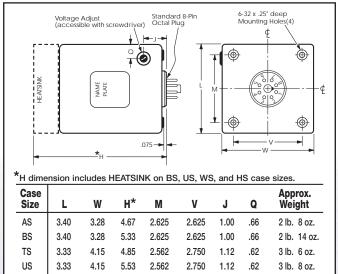
- OUT

GROUND

CASE
GROUND

1
2
3
7
8





#### **OPTIONS**

WS

HS

3.40

3.40

5.02

5.02

5.53

6.65

**Solder Terminals:** All models can be furnished with solder terminals instead of the octal type plug. Contact factory or see web site for detailed information.

2.562

2.562

3.562

3.562

1.12

1.12

.62

.62

4 lb. 14 oz.

5 lb.

Remote Output Adjustment: All models have a local voltage adjustment. When provision for remote (external) adjustment is also desired, add prefix "E" to model number. Example: Model 12J100 becomes Model E12J100.

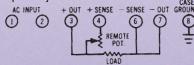
No increase in price.

AC INPUT + OUT - OUT

1 2 3 7 5 4 6 8

REMOTE POT

**Remote Sensing:** Provision for remote sensing of the output voltage to compensate for drops in the load lines can be furnished at an additional charge of \$10.00 per unit. Add prefix "R" to model number when ordering. "R" power supplies have a local voltage adjustment and provision for remote (external) output adjustment.



**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210 to 250 VAC, 50-400 Hz. Add suffix "–230" to model number and \$25.00 to price. The "–230" option requires two additional days.

**Overvoltage Protection:** An internal preset overvoltage protector is available. To order, add prefix "V" to the model number, and add \$25.00 to the standard price of models with outputs of 1 to 70 volts; \$35.00, for 75 to 200 volt outputs.

# **SINGLE OUTPUT PLUG-IN**

						ING		
Nominal	Adjust	Output	Regul	ation	Ripple			
Output	Range	Current	Load	Line	mV	(\$)		Case
Voltage	± V	Amps.	± %	± %	RMS	Price	Model	Size
1	.25	.100	.25	.05	0.5	\$145	1J10	AS
1.5	.5	.750	.7	.05	1	\$170	1.5J75	AS
2.5	.5	.750	.7	.05	1	\$170	2.5J75	AS
3.3 3.3	.5 .5	.750 1.0	.7 .5	.05 .05	1	\$170 \$185	3.3J75 3.3J100	AS AS
3.3	.5	1.5	.5	.05	1	\$200	3.3J150	US
3.3	.5	2.0	.5	.05	1	\$220	3.3J200	WS
3.3 3.3	.5 .5	3.0 4.0	.5 .5	.05 .05	1	\$245 \$270	3.3J300 3.3J400	WS HS
4	1	.750	.4	.05	1	\$170	4J75	AS
4	.5	1.0	.5	.05	1	\$185	4J100	AS
5 5	1	.750 1.0	.4 .5	.05 .05	1	\$170 \$185	5J75 5J100	AS AS
5	.5 .5	1.5	.5 .4	.05	1	\$200	5J150	US
5	.5	2.0	.5	.05	1	\$220	5J200	WS
5 5	.5 .5	3.0 4.0	.5 .5	.05 .05	1	\$245 \$270	5J300 5J400	WS HS
5	.5	5.0	.7	.05	1	\$290	5J500	HS
6	1	.400	.15	.05	1	\$160	6J40	AS
6	1	.750 1.0	.3 .3	.05 .05	1	\$170 \$185	6J75 6J100	AS AS
6	.5	2.0	.3	.05	1	\$220	6J200	WS
6	.5	3.0	.5	.05	1	\$245	6J300	WS
6	.5 .5	4.0 5.0	.5 .7	.05 .05	1	\$270 \$290	6J400 6J500	HS HS
8	1	.750	.2	.05	1	\$170	8J75	AS
8	1	1.0	.2	.05	1	\$190	8J100	AS
9	1	.750	.15	.05	1	\$170	9J75	AS
9	1	1.0 1.5	.2 .3	.05 .05	1	\$190 \$220	9J100 9J150	AS US
9	.5	2.0	.2	.05	1	\$250	9J200	WS
10	1	.750	.15	.05	1	\$170	10J75	AS
10 10	1	1.0 1.5	.2 .25	.05 .05	1	\$190 \$220	10J100 10J150	AS US
10	.5	2.0	.15	.05	1	\$250	10J200	WS
10	.5	3.0	.25	.05	1	\$290	10J300	HS
12 12	1	.750 1.0	.15 .1	.05 .05	1	\$170 \$190	12J75 12J100	AS AS
12	1	1.5	.2	.05	1	\$220	12J150	US
12	.5	2.0	.1	.05	1	\$250	12J200	WS
12 15	.5 1	3.0 .400	.25 .1	.05	1	\$290 \$160	12J300 15J40	HS AS
15	1	.750	.15	.05	1	\$170	15J40 15J75	AS
15	1	1.0	.15	.05	1	\$190	15J100	AS
15 15	1 .5	1.5 2.0	.2 .1	.05 .05	1	\$220 \$250	15J150 15J200	US WS
15	.5	3.0	.25	.05	1	\$290	15J300	HS
16	1	.400	.1	.05	1	\$160	16J40	AS
16 16	1 1	.750 1.0	.15 .15	.05 .05	1	\$170 \$190	16J75 16J100	AS AS
18	1	.400	.1	.05	1	\$160	18J40	AS
18	1	.750	.15	.05	1	\$170	18J75	AS
18 18	1 .5	1.0 2.0	.15	.05 .05	1	\$190 \$250	18J100 18J200	US WS
20	1	.400	.1 .1	.05	1	\$160	20J40	AS
20	1	.750	.15	.05	1	\$170	20J75	AS
20 20	1 .5	1.5 2.0	.2 .1	.05 .05	1 1	\$220 \$250	20J150 20J200	WS WS
22	1	.400	.1	.05	1	\$160	20J200 22J40	AS
22	1	.750	.15	.05	1	\$170	22J75	AS
22 22	1 1	1.0 1.5	.15 .2	.05 .05	1	\$190 \$220	22J100 22J150	US WS
22	.5	2.0	.1	.05	1	\$250	22J200	WS
24	1	.400	.05	.05	1	\$160	24J40	AS
24 24	1 1	.750 1.0	.1 .1	.05 .05	1 1	\$170 \$190	24J75 24J100	AS US
24	1	1.5	.15	.05	1	\$220	24J150	ws
24	.5	2.0	.1	.05	1	\$250	24J200	WS
25 25	1 1	.400 .750	.05 .1	.05 .05	1 1	\$160 \$170	25J40 25J75	AS AS
25	1	1.0	.1	.05	1	\$190	25J100	US
25 25	1 .5	1.5 2.0	.15 .1	.05 05	1 1	\$220 \$250	25J150 25J200	WS WS
28	1	.400	.05	.05	1	\$160	25J200 28J40	AS
28	1	.500	.05	.05	1	\$165	28J50	AS
28 28	1	.750	.1	.05 .05	1	\$175 \$195	28J75	TS
28	1	1.0 1.5	.1 .15	.05	1	\$195 \$225	28J100 28J150	US WS
28	.5	2.0	.1	.05	1	\$260	28J200	WS
30	1 1	.400 500	.05 .05	.05	1	\$160 \$170	30J40	AS
30 30	1	.500 .750	.05 .1	.05 .05	1	\$170 \$185	30J50 30J75	AS TS
30	1	1.0	.1	.05	1	\$200	30J100	US
30 30	1 .5	1.5 2.0	.15 .1	.05 .05	1	\$235 \$265	30J150 30J200	WS WS
			2000		Name of the Owner of the			

Nominal	Adjust	ust Output Regulatio			Ripple			
Output	Range	Current	Load	Line	mV	(\$)		Case
Voltage	±Ϋ	Amps.	± %	± %	RMS	Price	Model	Size
32	1	.300	.05	.05	1	\$165	32J30	AS
32 32	1	.500 .600	.05 .1	.05 .05	1	\$175 \$185	32J50 32J60	AS TS
32	1	1.0	.1	.05	1	\$200	32J100	US
32	1	1.5	.1	.05	1	\$235	32J150	WS
34	1	.500	.05	.05	1	\$175	34J50	AS
35	1	.500	.05	.05	1	\$175	35J50	AS
36 36	1	.300 .500	.05 .05	.05 .05	1 1	\$165 \$175	36J30 36J50	AS AS
36	1	.600	.1	.05	1	\$185	36J60	TS
36	1	.800	.1	.05	1	\$195	36J80	TS
36 36	1	1.0 1.5	.2 .1	.05 .05	1	\$210 \$240	36J100 36J150	US WS
38	1	.500	.05	.05	1	\$185	38J50	AS
38	1	1.0	.2	.05	1	\$215	38J100	US
40	1	.300	.05	.05	1	\$170	40J30	AS
40 40	1	.400 .600	.1 .1	.05 .05	1	\$185 \$195	40J40 40J60	AS TS
40	1	1.0	.2	.05	1	\$220	40J100	US
42	1	.400	.1	.05	1	\$175	42J40	AS
42	1	.600	.15	.05	1	\$200	42J60	TS
45 45	1	.400 .600	.1 .15	.05 .05	1	\$190 \$210	45J40 45J60	AS TS
48	1	.300	.05	.05	1	\$185	48J30	AS
48	1	.400	.1	.05	1	\$195	48J40	AS
48	1	.600	.15	.05	1	\$220	48J60	TS
50 50	1	.300 .500	.05 .1	.05 .05	1 1	\$190 \$220	50J30 50J50	AS TS
55	1	.200	.05	.05	1	\$175	55J20	AS
60	1	.200	.05	.05	1	\$190	60J20	AS
60	1	.300	.05	.05	1	\$200	60J30	AS
60	1	.400	.05	.05	1	\$220	60J40	TS
65 65	1	.100 .300	.05 .05	.05 .05	1 1	\$175 \$210	65J10 65J30	AS AS
70	1	.200	.05	.05	1	\$195	70J20	AS
70 75	1	.300	.05	.05	1	\$215 \$210	70J30 75J20	AS AS
80	1	.200	.05	.05	1	\$210	80J20	AS
90	1	.100	.05	.05	1	\$195	90J10	AS
90	1	.200	.05	.05	1	\$220	90J20	AS
95	1	.100	.05	.05	1	\$200	95J10	AS
95	1	.200	.05	.05	1	\$225 \$215	95J20 100J10	AS AS
100	1	.200	.05	.05	1	\$215 \$240	100J10 100J20	AS
105 105	1	.100 .200	.05 .05	.05 .05	1 1	\$215 \$240	105J10 105J20	AS AS
110	1	.100	.05	.05	1	\$240	110J10	AS
110	1	.200	.05	.05	1	\$245	110J20	AS
120 120	1	.100 .200	.05 .05	.05 .05	1 1	\$235 \$260	120J10 120J20	AS AS
125	1	.100	.05	.05	1	\$235	125J10	AS
125	1	.200	.05	.05	1	\$260 \$240	125J20 130J10	AS AS
130	i	.200	.05	.05	1	\$265	130J20	AS
140	1	.200	.05	.05	1	\$270	140J20	AS
150 150	1	.050 .200	.05 .05	.05 .05	1 1	\$220 \$270	150J05 150J20	AS AS
200	1	.100	.05	.05	1	\$265	200J10	AS

WIDE ADJUST OUTPUT
Shown below is a partial listing of models with increased voltage adjustment ranges. Contact the factory for information on other models.

Output	Output	Regul	ation	Ripple			
Voltage Range	Current Amps.	Load ± %	Line ± %	mV RMS	(\$) Price	Model	Case Size
2 to 30 3 to 15 4 to 10 5 to 15 5 to 25	.300 .400 1.5 2.0	.5 .5 .5	.05 .05 .05 .1	1 1 1 5	\$165 \$165 \$260 \$300 \$160	J230 J315 J410 J515 J525	AS BS US HS AS
6 to 30 10 to 18 10 to 40 15 to 25 15 to 30	.200 .600 .200 .500	.1 .3 .1 .1	.05 .05 .05 .05	1 1 1 1 1	\$165 \$175 \$170 \$190 \$190	J630 J1018 J1040 J1525 J1530	AS BS AS BS BS
16 to 24 18 to 30 20 to 28 23 to 32 24 to 32	.750 .400 .500 1.0 .500	.15 .1 .1 .15	.05 .05 .05 .05 .05	1 1 1 1	\$195 \$185 \$190 \$220 \$165	J1624 J1830 J2028 J2332 J2432	BS BS BS US BS
24 to 40 24 to 50 28 to 60 30 to 70	.400 .250 .250 .300	.1 .1 .1	.05 .05 .05 .05	1 1 1	\$190 \$165 \$220 \$250	J2440 J2450 J2860 J3070	BS AS BS BS



# Plug-in **DUAL ISOLATED OUTPUTS**(User-selectable)

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- Five Year Warranty

**Space-saving Acopian duals** combine two electrically independent DC outputs in a single case. Either identical or different outputs may be selected. And every combination is supplied with Acopian's usual 3 day shipment guarantee and 5 year warranty.



Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Specifications: See page 87.

**Polarity:** Outputs are floating. Each section may be independently connected to provide any combination of positive and negative outputs.

**Short Circuit Protection:** Delivers current surges without damage—to protect against prolonged overloads and shorts, use of an input fuse is recommended.

**Temperature Coefficient:** 0.02%/°C (Typical). **Ambient Operating Temperature:** -10 to +65°C. No derating required.

**MIL Tested and Extended Temperature Range:** See page 81.

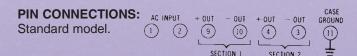
Storage Temperature: -55 to +85°C.

**Installation:** Plugs into standard 11-pin octal-type socket (see page 81). Four mounting holes (6-32) are provided in the base for fastening the module when used in other than the upright position, or if extreme vibration will be encountered.

#### **HOW TO ORDER**

Select two **sections** from the table on page 87. The complete model number is the combination of the two **sections** selected. Example: The combination of section 6J40D and section 12J100D is Model 6J40D-12J100D. Always assign the lower voltage section first. (Two of the same section can also be selected.) Where the indicated case sizes for the two sections differ, the larger case size applies.

For pricing purposes, add the costs of the individual sections selected. Example: The price of Model 6J40D-12J100D is \$215.00 total (\$95.00 plus \$120.00).



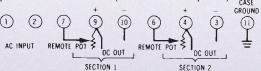


Like all Acopian Plug-ins, a dual-output module can be installed in seconds. Simply plug it into a standard 11-pin socket. Acopian duals are exceptionally dependable, too - offering the highest reliability of any available series-regulated power supply.

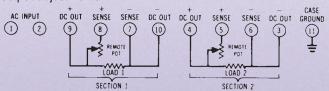
#### **OPTIONS**

**Solder Terminals:** All models can be furnished with solder terminals instead of the octal type plug. Contact factory or see web site for detailed information.

**Remote Output Adjustment:** All models have local voltage adjustments. When provision for remote (external) adjustments is also desired, add prefix "E" to model number. Example: E6J40D-12J100D. (No increase in price.)



Remote Sensing: Provision for remote sensing of the output voltages, to compensate for drops in the load lines, can be furnished at an additional charge of \$20.00 per unit. Add prefix "R" to model number when ordering. "R" power supplies have local voltage adjustments and provision for remote (external) output adjustments.



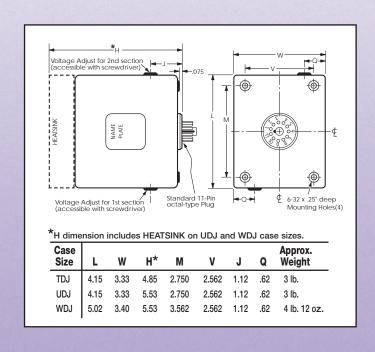
**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210 to 250 VAC, 50 to 400 Hz. Add suffix "-230" to model number and \$25.00 to price. The "-230" option requires two additional days.

**Overvoltage Protection:** Two separate, preset overvoltage protection circuits, one for each output. To order, add prefix "V" to model number and add \$30.00 to the standard price for outputs up to 70 volts; add \$50.00 if either or both outputs are greater than 70 volts.

# **DUAL OUTPUT PLUG-IN (User-selectable)**

				HL		, , , ,		
Nominal	Adiust	Output	Regul			(see 'How	to Order')	
Output Voltage	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	Price per Section (\$)	Section	Case Size
3.3	.5	.500	.5	.05	1	\$125	3.3J50D	TDJ
3.3	.5	.700	.5	.05	1	\$135	3.3J70D	UDJ
3.3	.5	1.0	.5	.05	1	\$145	3.3J100D	WDJ
4	1	.500	.3	.05	1	\$125	4J50D	TDJ
4	.5	.700	.4	.05	1	\$135	4J70D	UDJ
4	.5	1.0	.5	.05	1	\$145	4J100D	WDJ
5	1	.400	.3	.05	1	\$120	5J40D	TDJ
5	_1	.500	.3	.05	1	\$125	5J50D	TDJ
5	.5	.700	.4	.05	1	\$135	5J70D	UDJ
5 5	.5 .25	1.0 2.0	.5	.05	1	\$145 \$175	5J100D 5J200D	WDJ
		_	.5	.05	_			WDJ
6	1	.400	.15	.05	1	\$120	6J40D	TDJ
6	.5	.500 .700	.15 .2	.05	1	\$125 \$135	6J50D 6J70D	UDJ
6	.5	1.0	.3	.05	1	\$145	6J100D	WDJ
						· ·		
7	1	.400 .500	.15 .15	.05	1	\$120 \$125	7J40D 7J50D	TDJ
7	.5	.700	.15	.05	1	\$135	7J70D	UDJ
7	.5	1.0	.3	.05	1	\$145	7J100D	WDJ
			.1		1	· ·		_
<u>8</u> 8	1	.400 .500	.1	.05 .05	1	\$120 \$125	8J40D 8J50D	TDJ
8	.5	.700	.15	.05	1	\$135	8J70D	UDJ
8	.5	1.0	.2	.05	1	\$145	8J100D	WDJ
9	1	.500	.1	.05	1	\$125	9J50D	TDJ
9	.5	.700	.15	.05	1	\$135	9J70D	UDJ
9	.5	1.0	.2	.05	i	\$145	9J100D	WDJ
10	1	.400	.1	.05	1	\$120	10J40D	TDJ
10	1	.500	.1	.05	1	\$125	10J50D	TDJ
10	.5	.700	.15	.05	1	\$135	10J70D	UDJ
10	.5	1.0	.2	.05	1	\$145	10J100D	WDJ
12	1	.400	.1	.05	1	\$120	12J40D	TDJ
12	1	.500	.1	.05	1	\$125	12J50D	TDJ
12	.5	.700	.1	.05	1	\$135	12J70D	UDJ
12	.5	1.0	.1	.05	1	\$150	12J100D	WDJ
13	1	.500	.1	.05	1	\$125	13J50D	TDJ
13	.5	.700	.1	.05	1	\$135	13J70D	UDJ
13	.5	1.0	.15	.05	1	\$150	13J100D	WDJ
15	1	.400	.1	.05	1	\$120	15J40D	TDJ
15	1	.500	.1	.05	1	\$125	15J50D	TDJ
15	.5	.700	.1	.05	1	\$135	15J70D	UDJ
15	.5	1.0	.15	.05	1	\$150	15J100D	WDJ
18	1	.400	.1	.05	1	\$120	18J40D	TDJ
18	1	.500	.1	.05	1	\$125	18J50D	TDJ
18	1	.750	.15	.05	1	\$140	18J75D	WDJ
18	.5	1.0	.15	.05	1	\$150	18J100D	WDJ

					_			
Nominal	Adjust	Output	Regul	ation	Ripple	(see 'How	to Order')	
Output Voltage	Range ± V	Current Amps.	Load ± %	Line ± %	mV RMS	Price per Section (\$)	Section	Case Size
20	1	.400	.1	.05	1	\$120	20J40D	TDJ
20	1	.500	.1	.05	1	\$125	20J50D	TDJ
20		.750	.15	.05	1	\$140	20J75D	WDJ
22	1	.400	.1	.05	1	\$120	22J40D	TDJ
24	1	.400	.1	.05	1	\$120	24J40D	TDJ
26		.400	.05	.05		\$120	26J40D	TDJ
28	1	.400	.05	.05	1	\$120	28J40D	TDJ
30	1	.400	.05	.05	1	\$125	30J40D	TDJ
32	1	.300	.05	.05	1	\$125	32J30D	TDJ
34	1	.300	.05	.05	1	\$125	34J30D	TDJ
35	1	.200	.05	.05	1	\$120	35J20D	TDJ
36	1	.200	.05	.05	1	\$120	36J20D	TDJ
40	1	.200	.05	.05	1	\$125	40J20D	TDJ
45	1	.200	.05	.05	1	\$125	45J20D	TDJ
48	1	.200	.05	.05	1	\$135	48J20D	TDJ
50	1	.200	.05	.05	1	\$140	50J20D	TDJ
55	1	.200	.05	.05	1	\$145	55J20D	TDJ
60	1	.100	.05	.05	1	\$135	60J10D	TDJ
65	1	.100	.05	.05	1	\$140	65J10D	TDJ
70	1	.050	.05	.05	1	\$125	70J05D	TDJ
70	1	.100	.05	.05	1	\$140	70J10D	TDJ
75	1	.100	.05	.05	1	\$145	75J10D	TDJ
80	1	.100	.05	.05	1	\$150	80J10D	TDJ
85	1	.100	.05	.05	1	\$160	85J10D	TDJ
90	1	.100	.05	.05	1	\$165	90J10D	TDJ
95	1	.100	.05	.05	1	\$170	95J10D	TDJ
100	1	.100	.05	.05	1	\$175	100J10D	TDJ
105	1	.100	.05	.05	1	\$175	105J10D	TDJ
110	1	.100	.05	.05	1	\$185	110J10D	TDJ
115	1	.100	.05	.05	1	\$190	115J10D	TDJ
120	1	.100	.05	.05	1	\$195	120J10D	TDJ
125	1	.100	.05	.05	1	\$195	125J10D	TDJ
130	1	.100	.05	.05	1	\$200	130J10D	TDJ
135	1	.100	.05	.05	1	\$200	135J10D	TDJ
140	1	.100	.05	.05	1	\$210	140J10D	TDJ
145	1	.100	.05	.05	1	\$210	145J10D	TDJ
150	1	.100	.05	.05	1	\$210	150J10D	TDJ





# Plug-in DUAL TRACKING OUTPUTS

LINEAR REGULATED AC-DC

- Shipped Within 3 Days
- All Models U.L. Recognized
- Five Year Warranty

**Dual tracking output Plug-in** power supplies provide the balanced voltages commonly required for driving operational amplifiers and related linear circuitry. The convenient plug-in configuration simplifies mounting and wiring, and connections for the remote sensing of the



output voltages, to permit compensation of load line voltage drops, are a standard feature.

#### **SPECIFICATIONS**

Input Voltage: 105-125 VAC, 50-400 Hz, single phase.

Output Tracking: Within 1%.

Polarity: Positive output, common, and negative output.

**Remote Voltage Sensing:** Provision for sensing the output voltage across the load, so that drops in the load lines are compensated, is a standard feature.

Temperature Coefficient: 0.02%/°C (Typical).

Ambient Operating Temperature: -10 to +65°C.

No derating required.

Storage Temperature: -55 to +85°C.

**Installation:** Plugs into standard 8-pin octal socket (see page 81). Four mounting holes (6-32) are provided in the base for fastening the module when used in other than the upright position, or if extreme vibration will be encountered.

PIN CONNECTIONS: 1 2 3 4 5 6 7 8

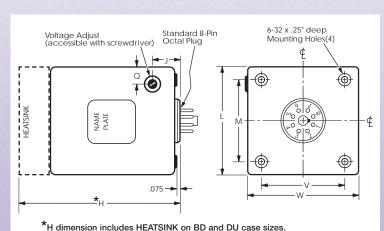
#### **OPTIONS**

**Solder Terminals:** All models can be furnished with solder terminals instead of the octal-type plug. To order, add suffix "L" to model number and \$30.00 to price.

**230 Volt Input:** All models can be alternately furnished for operation on inputs of 210-250 VAC, 50-400 Hz. Add suffix "–230" to model number and \$25.00 to price. The "–230" option requires two additional days.

**Overvoltage Protection:** A built-in, preset overvoltage protection circuit is available on all models. If either output fails, both outputs are 'crowbarred'. To order, add prefix "V" to the model number, and increase standard price by \$30.00.

Nominal	Adjust	Amps.	Regul	ation				
Output	Range	per	Load	Line	mV	(\$)	Model	Case
Voltages	± V	Output	± %	± %	RMS	Price		Size
±5	.25	.750	.1	.1	1.5	\$250	JD5-75	BD
±5	.25	1.5	.1	.1	1.5	\$285	JD5-150	DU
±12 ±12 ±12	1 1 1	.400 .700 1.0	.1 .1	111	1.5 1.5 1.5	\$220 \$250 \$285	JD12-40 JD12-70 JD12-100	DA BD DU
±15	1	.400	.1	.1	1.5	\$220	JD15-40	DA
±15	1	.700	.1	.1	1.5	\$250	JD15-70	BD
±15	1	1.0	.1	.1	1.5	\$285	JD15-100	DU



Case Size	L	w	Н*	М	V	J	Q	Approx. Weight
DA	3.40	3.28	4.67	2.625	2.625	1.00	.66	2 lb. 8 oz.
BD	3.40	3.28	5.33	2.625	2.625	1.00	.66	2 lb. 14 oz.
DU	3.33	4.15	5.53	2.562	2.750	1.12	.62	3 lb. 8 oz.



# CIRCUIT ENCLOSURE BOXES

Versatile enclosures for housing prototypes, adapters, testers, etc.

You can now package your own circuits in the same rugged casework used for Acopian power supplies.



#### Any case size shown in the Acopian catalog can be purchased as a Circuit Enclosure Box.

#### **DESCRIPTION**

Moderate-dissipation components may be directly mounted to the case for heat sinking. Connectors, switches, controls and indicators are easily installed on the front and rear covers.

Sides and Bottom (Narrow Profile Enclosures): Attractive extruded aluminum channel (.08" thick) withstands even severe abuse.

Top cover (Narrow Profile Enclosures): Perforated for ventilation, the sturdy aluminum top (0.032" thick) slides into slots without the need for mounting hardware. Sides (Gold Box Enclosures): Grooved; attractive and rugged extruded aluminum sides (.08" thick) can withstand severe abuse.

Top and Bottom Covers (Gold Box Enclosures): Perforated aluminum (0.032" thick); ideal for ventilation.

Front and Rear covers: Aluminum (0.062" thick).

Internal Circuit Board Mounting (Narrow Profile Enclosures): Grooves 1/4" above the inside bottom of the case are for holding a circuit board (0.062" thick). Color: Flat gold (sides are flat black on Gold Box Enclosures).

Mounting: Threaded mounting holes are provided to permit mounting the boxes to an equipment frame or bracket. Accessory Mounting Kits are available for wall mounting or DIN Rail mounting (see page 91).

#### ACCESSORIES

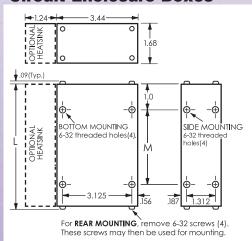
Circuit Board (for Narrow Profile Enclosures): Perforated board for mounting hand-wired components. Contact factory for sizes.

Mounting Kits: For wall mounting or DIN Rail mounting (see page 91).

Heat sink (for Narrow Profile Enclosures): High-dissipation semiconductors may be mounted on an accessory heat sink. (Provided with mounting hardware, including standoffs for thermal isolation. The heat sink is black anodized.) Contact factory.

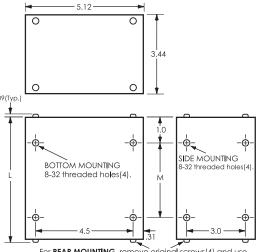
Heat sink (for Gold Box Enclosures): An optional heat sink can be ordered for the left side to replace the grooved aluminum side. High-dissipation semiconductors may be mounted on the accessory heat sink. To order, add suffix "H" to model number and \$2.00 to price (for models EG9H and EG13H, add \$4.00).

# Narrow Profile Circuit Enclosure Boxes



Case Size	L	М	Approx. Weight	Price (\$)
EN6	6.59	4.0	9 oz.	\$27
EN8	8.47	5.0	12 oz.	\$30

#### Gold Box Circuit Enclosure Boxes



For **REAR MOUNTING**, remove original screws(4) and use 8-32 Type F self-tapping screws.

Case Size	L	M	Approx. Weight	Price (\$)
EG3	3.71	1.62	11 oz.	\$25
EG5	5.09	3.0	14 oz.	\$28
EG6	6.59	4.0	1 lb. 2 oz.	\$29
EG9	9.25	6.0	1 lb. 7 oz.	\$33
EG13	13.25	10.0	2 lb. 1 oz.	\$38

#### Other size Circuit Enclosure Boxes

Rack Mounting;

see page 28 & 69 drawings

Wall Mounting;

see page 21 drawing

SW Gold Box;

see page 55 drawing

HV Gold Box;

see page 71 & 73 drawings

Plug-in;

see page 84 drawing

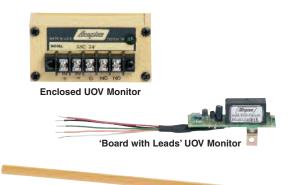


# **Under/Overvoltage Monitors**

These modules can be used with any manufacturer's power supply between 5 Vdc and 125 Vdc.

- Shipped Within 3 Days
- Five Year Warranty





**These Under/Overvoltage Monitors** may be used as independent accessories for any power supply to control an external horn or light, or to signal your PLC . These modules can be used on power supplies with DC voltages from 5 to 125 Vdc. SPDT relay contacts switch if the power supply's output deviates by:

- 1.0 volt or more (for 5 volt outputs)
- 2.0 volts or more (for 6 to 48 volt outputs)
- 3.0 volts or more (for 49 to 125 volt outputs)

#### **SPECIFICATIONS**

Relay contact ratings: 120 VAC, 8A / 60 Vdc, 1A. (To comply with SELV requirements, limit switched voltage to 60Vdc/42 VAC.)

Ambient Operating Temperature: -20 to +71°C.

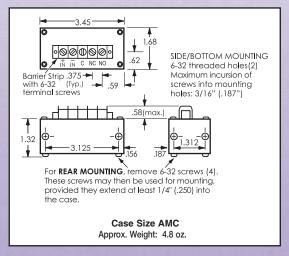
Storage Temperature: -40 to +85°C.

Power Supply Output	<b>UOV Monitor Operating Current</b>
5 Vdc to 11 Vdc	(typ) 80ma
12 Vdc to 23 Vdc	(typ) 40ma
24 Vdc to 47 Vdc	(typ) 25ma
48 Vdc to 125 Vdc	(typ) 15ma

#### **Enclosed UOV Monitor**

The front panel LED lights when voltage is within range. Order model number AMC?? replacing the ?? with the DC voltage to be monitored. The price is \$65.00.

**Mounting:** Threaded holes on the bottom and right side surface may be used for mounting. Accessory Mounting Kit NP6 (see page 91) is available to enable mounting the Enclosed UOV Monitor when the opposite side of the mounting surface is inaccessible. To order a DIN rail mounting unit, add suffix "–DIN" to the model number and \$5.00 to the price.

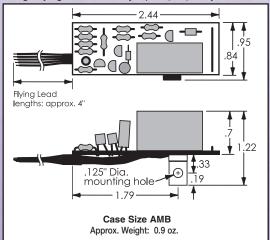


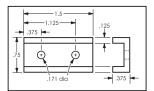
#### 'Board with leads' UOV Monitor

Order model number AMB?? replacing the ?? with the DC voltage to be monitored. The price is \$35.00.

**Mounting:** An electrically isolated bracket with a .125" diameter mounting hole has been incorporated into the 'Board with leads' UOV Monitor to enable mounting in any orientation.

Red flying lead: Connects to '+ DC' being monitored. Black flying lead: Connects to '- DC' being monitored. White flying lead: Common (C) relay connection. Green flying lead: Normally Closed (NC) relay connection. Orange flying lead: Normally Open (NO) relay connection.





# **WALL MOUNTING KITS ...\$8**

These kits provide a way of mounting power supplies on a wall or panel when the other side of the mounting surface is inaccessible. Each kit consists of four aluminum brackets and four machine screws for fastening them to the power supply, effectively adding mounting flanges to the power supply.

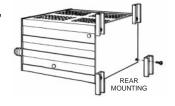


#### For Gold Box and modular High Voltage power supplies:

GB8 Mounting Kit (#8-32 mounting holes)

Can be used on these case sizes:

CM6, CM9, CM13, CH11, CH16, DG5, DG6, DG9, G3, G5, G5D, G6, G9, G13, GT5, GT6, GT9, GT13, H8, H11, H16, HD345, HD355, HA349, HA359, HT11, HT16, M6, M9, M13, RM6, RW6 TG5, TG6, TG9, TG13, TH11, WG7, WM6, WM9, Y3, Y5, Y6, YH11, YA



#### For Narrow Profile power supplies:

NP6 Mounting Kit (#6-32 mounting holes)

Can be used on these case sizes:

AMC, CN8T, DN6B, DN6A, DN8A, DN8, F6T, F8T, N8T, WL9, WN6A, WN6B, WN8, WN8A, TN6T

NP6L Mounting Kit (#6-32 mounting holes)

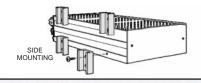
Model NP6L consists of two brackets 1.5" long as shown above. and two 2.5" long brackets (to extend beyond heat sink).

WN8

WN8A

Can be used on these case sizes:

CN8H, N8H, TN8H



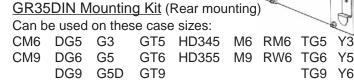
# **DIN RAIL MOUNTING KITS ...\$15**

NPH35DIN Mounting Kit (Horizontal mounting)

Can be used on these case sizes:

CN8H DN6A F6T N8H TN6T WN6A CN8T DN6B F8T N8T TN8H WN6B

DN8 DN8A



G6 G9

(Can be used, but not recommended on case sizes: G13, GT13, M13, TG13)

NPV35DIN Mounting Kit (Vertical mounting) Can be used on these case sizes:

CN8H DN6A F6T N8H TN6T WN6A CN8T DN6B F8T N8T TN8H WN6B DN8 WN8 DN8A WN8A

WL35DIN Mounting Kit (Vertical mounting) Can be used on this case size: WL9

GH35DIN Mounting Kit (Horizontal mounting) Can be used on these case sizes: GT5 CM6 DG5 G3 M6 CM9 DG6 G5 GT6 M9 CM13 DG9 G5D GT9

TG6 Y5 M13 TG9 Y6 **TG13** G6 GT13 G9

TG5

G13

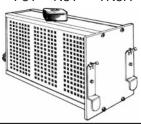
**Y3** 

Y5

NPR35DIN Mounting Kit (Rear mounting)

Can be used on these case sizes:

CN8H F6T N8H TN6T CN8T F8T N8T TN8H



CH35DIN Mounting Kit (Horizontal mounting) Can be used on these case sizes: RM6, RW6

WH35DIN Mounting Kit (Horizontal mounting) Can be used on these case sizes: WM6, WM9





## FIND POWER SUPPLY BY MODEL NUMBER

Over 500,000 different Acopian model numbers are possible considering all the different combinations of outputs, inputs and options available. However, by matching the model number format of the power supply you are looking for with the model number format from the list below, you will be able to find the page it is on.

- For the model that you are looking for, replace the 'numbers' in that model number with the # symbol. Examples: To find model number A24H8500, use A#H#. To find model number 24EB60, use #EB# (The numbers(#), which indicate voltage and current, will vary depending on your particular model number. The letters do not vary.)
- Ignore V or 3V (Overvoltage Protection option) if it is in the front of the model number you are looking for.
- Option letter prefixes E and R are included with parenthesis around them, (E) and (R), in the list below.
- Ignore any of these option letters/numbers which may appear at the end of the model number you are looking for: A,F,G,H,K,L,M,P,R,S,T,Y or -230.

Model	Model	Model
Number	Number	Number
Format Page	Format Page_	Format Page
A#H#48-49	J#85	RM#N#XC#24
A#HT#49	#J#85	RM#WN#26
A#HX#59	#J#D-#J#D87	RM#WN#A26
A#MT#48-49	JD#-#88	RM#WN#AC#26
A#MX#59	LD#-#62	RM#WN#C#26
A#NT#41	N#HA#71	RWL#G#20
A#NX#59	N#HD#71	RWL#H#18
A#PX#31	N#HP#69	RWL#M#18
A#TN#41	NX-#33	RWL#M#X18
A#XN#59	NX-#A33	RWL#N#T18
B#FT#41	NX-#B37	RWL#N#X18
B#G#48-49		RWL#W#20
B#GT#49	P#HA#71	(R)#J#85
	P#HD#73	(R)#J#D-#J#D87
B#TN#41	P#HP#69	(R)B#G#48-49
#C#FT#79	P#HX#59	(R)B#GT#49
#C#NT#79-80	P#MX#59	(R)J#85
D#-#34	P#PX#31	TD#-#62
D#-#A34	PD#-#29	#T#A67
#D#A66	#PT#29	U#83
DB#-#37	#PH#29	U#Y#57
#E#33	R#G#20	U#YA#57
#E#A33	R#H#18	#U#83
	R#M#18	#UA#83
#E#D#75 #E#E#75	R#N#T18	#UP#83
	R#N#X18	#UY#57
#EB#77	R#P#19	UP#83
#EB#D#77	R#PH#19	US#83
	R#W#20	W#FT#43
(E)#J#85	R#WP#23	W#GT#55
(E)#J#D-#J#D87	R#WP#X23	W#MT#55
(E)J#85	RM#H#24	W#LT#53
(E)P#HX#59	RM#H#C#24	W#NT#45
(E)P#MX#59	RM#M#24	#WB#39
(E)P#PX#31	RM#M#C#24	#WL#39
FD#-#A62	RM#N#T24	
#GT#D-#GT#D64-65	RM#N#TC#24	Y#HX#61
	RM#N#X24	Y#LX#53
		Y#MX#61
		Y#PX#61

### **ORDERING INFORMATION & Terms and Conditions**

ACOPIAN SELLS FACTORY DIRECT WORLDWIDE: We do not use representatives or distributors. Contact Acopian for technical information or a quote.

WARRANTY: Acopian power supplies are warranted to be free from defects in material and workmanship for a period of five years (encapsulated devices, for one year) from date of original shipment. Acopian's obligation under this warranty is limited to repairing any power supply returned to the factory Service Department in Easton, PA and replacing any defective parts. Mini Encapsulated power supplies are not repairable. Authorization must be obtained from Acopian before a power supply may be returned for repair. Units must be well packed when shipping to Acopian; the repair of any damage incurred during shipment will be charged. Transportation charges are to be paid by the purchaser. A reinspection and handling charge will be applied to returned units found to have no defects. If a failure has been caused by misuse, operation in excess of specifications, or modification by the customer, repairs will be billed at cost; in such cases, a cost estimate will be submitted before work is started.

Acopian reserves the right to make changes or improvements in its products without incurring any obligation to install the same on products previously manufactured.

This warranty is in lieu of all other warranties, obligations, and liabilities, expressed or implied, and is the purchaser's exclusive remedy. Acopian makes no warranty, either express or implied, of merchantability, fitness for a particular purpose or otherwise. In no event shall Acopian be liable whether in contract, tort, or negligence, for special, indirect, incidental or consequential damages of any kind, including loss of business or profits, or any other losses incurred by the purchaser or any third party, the Customer's remedies being limited, at Acopian's option, to replacement, repair or credit at the price on the date of claim.

The validity, performance and construction of all terms and conditions and any sale made by Acopian shall be determined by the law of Pennsylvania, without regard to its conflict of law principles, and all parties to the transaction expressly consent to the jurisdiction of such courts and consent to the venue of the Court of Common Pleas for Northampton County, Pennsylvania.

PRICES: The prices shown are F.O.B. our factory; Easton, PA. or Melbourne, FL.. All prices and specifications are subject to change without notice. Minimum order is \$50.00.

TERMS: Net 30 days, subject to credit approval. Visa, MasterCard and American Express also accepted.

**SHIPPING:** Location permitting, small shipments are made by United Parcel Service, or by Parcel Post; larger shipments, by insured motor freight collect. Shipments can be made by air upon request. Risk of loss shall be F.O.B. Our Factory, even in cases where freight may be prepaid or allowed to destination by Acopian. If equipment is received in damaged condition, it is the customer's responsibility to contact the carrier and file a claim for damages.

TIME FOR DELIVERY: The time for delivery quoted by Acopian is the time required to ship from our plants. We will not be liable for delays in delivery caused by any reason beyond our control, including but not limited to acts of God, casualty, civil disturbance, labor disputes, transportation or supply difficulties, or any interruption of our facilities, and the quoted time for delivery shall be extended during the continuance of such conditions and for a reasonable time thereafter. In no event will Acopian be liable for any premium transportation, reprocurement, or similar costs incurred by the Customer as a result of conditions beyond Acopian's control resulting in Acopian's inability to deliver product in accordance with customer's requested delivery schedules.

**QUANTITY DISCOUNTS:** Discounts are available to quantity buyers and are dependent upon the order quantity and the manufacturing scheduling anticipated by the order, and apply only to the quantity and delivery ordered. Partial shipments are considered as separate orders for discounting purposes.

**EXPORT ORDERS:** A minimum export documentation charge of \$60.00 applies. (A minimum charge of \$25.00 applies on orders requiring customs forms for Canadian orders and for orders to certain U.S. territories.)

MOISTURE/FUNGUS PROOFING: Power supplies can be furnished with a moisture and fungus resistant varnish applied to interior surfaces. To order, add the suffix letter F to the model number. The additional cost is \$25.00 per output and requires two additional days. Not available on High Voltage, Mini Encapsulated, Rack Mounting, and Gold Box Switching models.

TAGGING: Maximum of 15 characters/spaces. Add \$10.00 to price.

TEST DATA: Cost, \$35.00 or 2% of order, whichever is greater.

**SPECIAL MODELS/MODIFICATIONS:** Cataloged models can be altered at the factory to meet special requirements. Contact the Applications Engineering Department to discuss your needs.

PARTS: The designs used in Acopian power supplies utilize standard components to the greatest practical extent. When replacements are required, the types originally used, or their equivalents, can usually be obtained most quickly from a local electronic components distributor.

Special components, such as transformers, are stocked at the factory warehouses. Contact the Applications Engineering Department for information on the parts required, referencing the model number of the power supply, the circuit designation of the component, and a description.

**PURCHASE ORDER ACCEPTANCE:** Orders are accepted subject to Acopian's Terms and Conditions. Any Terms and Conditions of any Purchaser's order, agreement, or understanding which are in addition to or inconsistent with Acopian's shall not be binding upon Acopian unless made in writing and accepted over the signature of an authorized officer of Acopian. Orders shall not be considered accepted until entered into production at our plant. Acopian reserves the right to refuse any order. All typographical and clerical errors are subject to correction by Acopian.

**RETURNED GOODS:** Acopian products are built on a per-order basis, and ordinarily no credit can be extended for their return. No goods will be accepted for return unless authorized in writing by Acopian.

**CHANGES:** The customer may, by a written notice, request changes within the general scope of the order, in the drawings, designs or specifications; method of shipment; and place of delivery. If any such change causes an increase or decrease in the cost, or the time required for the processing of any part of the order, an equitable adjustment shall be made in the price or delivery schedule, or both, and the order shall be modified in writing accordingly.

CANCELLATION: Suspension or cancellation of orders may be made only upon our written approval and on terms that will indemnify us against all loss.

**OVERTIME:** It is anticipated that any order will be processed during regular working hours on regular working days. If for any reason the Purchaser requests Acopian to process the order, or any portion of it, outside of such regular working hours, any overtime or other additional expense occasioned thereby shall be billed to and paid by the Purchaser as an extra cost. Acopian reserves the right to decline to process the order outside regular working hours.

**CUSTOMER DELAY OF WORK:** If the performance of all or any part of the work is delayed or interrupted by Customer's failure to act within the time specified (or within a reasonable time if no time is specified) and such act is not expressed or implied by the order, an adjustment shall be made in the cost of performance of the order caused by such delay or interruption and the order modified in writing accordingly. Adjustment will also be made in the delivery or performance dates and any other contractual provisions affected by such delay or interruption.

**GOVERNMENT SPECIFICATIONS:** Pricing is based upon industrial-grade construction, marking, packing, and packaging. Exception is taken to any MIL specifications, and to any requirements for the use of special forms, documentation other than quoted, and Government Source Inspection. Acopian must decline to quote on any other basis.

APPLICATIONS ASSISTANCE: Questions regarding the specifications, features, and use of any Acopian product should be directed to the Applications Engineering Department. A staff of power supply specialists will be pleased to assist you.

www.acopian.com - Now with Online Ordering and Instant Quotes Online!



**Acopian Technical Company** 

P.O. Box 638, Easton, PA 18044 • Phone: (610) 258-5441 • FAX: (610) 258-2842

Call toll free: (800) 523-9478 (International: Country Code 01)

ALL ACOPIAN
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POWER IN U.S.A.

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All Acopian metal-cased power products have a 5-year warranty, but you can expect them to last a lot longer. You may find power supplies that cost less or that are smaller, but you won't find any that last longer than an Acopian.

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At Acopian, a knowledgeable sales associate answers your call, not an automated system. Our staff will courteously and promptly answer your questions, quote price and delivery, expedite your urgent requirements, and offer you immediate access to our engineers. Call 610-258-5441 or toll free 800-523-9478.

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If you require a power supply shipment earlier than our standard 3 or 9 Day Promise, we can usually ship sooner. We welcome the opportunity to work with you.

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We can often modify the specifications, ratings and configuration of a supply. We can also combine several power supplies into a Multiple Output Power System with the operating features you specify (such as meters and switches) and ship it within 9 Days.

Acopian Technical Company P.O. Box 638 Easton, PA 18044

Stamp



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