

Narrow Profile

DC-DC Converters (to 288 watts)
REGULATED

wide input ranges single output

- Shipped Within 3 Days
- Five Year Warranty
- UL60950, UL508, CE Certified*

CALUS / CE / ROHS / CUL US
(*110 to 350 vdc input models only)



Don't forget these facts about Acopian....

- Fast Shipping? Acopian invented it! For over half a century, Acopian has built and shipped millions of power supplies within 3-DAYS after receipt of order. And we still do today!
 View our 3-DAY Shipping Promise: www.acopian.com/3dayship.html
- You ALWAYS talk to a real person when you call Acopian.
- Acopian power supplies last a <u>very long time!</u>
- You can email <a>3day@acopian.com anytime for 24/7 product support.
- The Online System Builder (www.acopian.com/SystemBuilder) is a convenient way to get your own custom power supply or power system (and most ship within 9 Days).
- You can order Acopian power supplies factory direct.
- ALL Acopian products are made in the USA.



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(*110 to 350 Vdc Input Models Only)

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 μ 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	300 Vdc
Input to case:	2828 Vdc	2121 Vdc	300 Vdc
Output to case:	750 Vdc	750 Vdc	300 Vdc

Drawings: See page D9.

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 H3.

NARROW PROFILE



Narrow Profile DC-DC CONVERTERS

								DC CONVERI		
Nominal	Adjust	Output					18 to 36 Vdc Input	36 to 75 Vdc Input	18 to 75 Vdc Input	110 to 350 Vdc Input *
Output Voltage	Range ± V	Amp 40°C	s. at 71°C	(@ 25 N RMS	IHz BW)	Case Size	Model	Model	Model	Model
3.3	.5	10	7	10	50	DN6B	24C3.3FT1000	48C3.3FT1000		
3.3	.5	15	10.5	10	50	DN6A	24C3.3FT1500	48C3.3FT1500		
3.3	.5	18.5	12.9	10	50	DN8A			18-75C3.3NT1850	230C3.3NT1850
3.3	.5	25	17.5	10	50	DN8		4005574000		230C3.3NT2500
5 5	.5 .5	10 15	7 10.5	10 10	50 50	DN6B DN6A	24C5FT1000 24C5FT1500	48C5FT1000 48C5FT1500		*
5	.5	18.5	12.9	10	50	DN8A			18-75C5NT1850	230C5NT1850
5	.5	25	17.5	10	50	DN8				230C5NT2500
6	.5	8.5	6	10	50	DN6B	24C6FT850	48C6FT850		*
6 6	.5 .5	12.5 15.4	8.6 10.7	10 10	50 50	DN6A DN8A	24C6FT1250	48C6FT1250	18-75C6NT1540	230C6NT1540
6	.5	24	16.8	10	50	DN8				230C6NT2400
7	.5	7	4.9	10	50	DN6B	24C7FT700	48C7FT700		*
7	.5	10.6	7.4	10	50	DN6A	24C7FT1060	48C7FT1060	40.7507174500	000071174.500
7 7	.5 .5	15 23	10.5 16.1	10 10	50 50	DN8A DN8			18-75C7NT1500	230C7NT1500 230C7NT2300
8	.5	6	4.2	15	100	DN6B	24C8FT600	48C8FT600		230071112300
8	.5	9.4	6.6	15	100	DN6A	24C8FT940	48C8FT940		
8	.5	14.7	10.3	15	100	DN8A			18-75C8NT1470	230C8NT1470
8	.5	23	16.1	15	100	DN8	040057550	400057550		230C8NT2300
9	.5 .5	5.5 9.3	3.8 6.5	15 15	100 100	DN6B DN6A	24C9FT550 24C9FT930	48C9FT550 48C9FT930		*
9	.5	14.4	10	15	100	DN8A		4009F1930	18-75C9NT1440	230C9NT1440
9	.5	23	16.1	15	100	DN8				230C9NT2300
10	.5	5	3.5	15	100	DN6B	24C10FT500	48C10FT500		*
10 10	.5 .5	9.2	6.4 9.8	15 15	100 100	DN6A DN8A	24C10FT920	48C10FT920	18-75C10NT1/10	230010NT1410
10	.5 .5	14.1 22	9.8 15.4	15	100	DN8A DN8			18-75C10NT1410	230C10NT1410 230C10NT2200
12	.5	4.5	3.1	15	100	DN6B	24C12FT450	48C12FT450		*
12	.5	9.1	6.3	15	100	DN6A	24C12FT910	48C12FT910		
12	.5	13.7	9.6	15	100	DN8A			18-75C12NT1370	230C12NT1370
12 13	.5 .5	4.3	15.4 3	15 15	100	DN8 DN6B	24C13FT430	48C13FT430		230C12NT2200
13	.5 .5	8.1	5.6	15	100	DN6A	24C13F1430 24C13FT810	48C13FT430 48C13FT810		*
13	.5	12.3	8.6	15	100	DN8A			18-75C13NT1230	230C13NT1230
13	.5	20	14	15	100	DN8				230C13NT2000
14	.5	4.2	3	15	100	DN6B	24C14FT420	48C14FT420		*
14 14	.5 .5	7.7 11.7	5.4 8.2	15 15	100 100	DN6A DN8A	24C14FT770	48C14FT770	18-75C14NT1170	230C14NT1170
14	.5	19	13.3	15	100	DN8				230C14NT1900
15	.5	4	2.8	15	100	DN6B	24C15FT400	48C15FT400		*
15	.5	7.4	5.2	15	100	DN6A	24C15FT740	48C15FT740		
15 15	.5 .5	11.1 18	7.8 12.6	15 15	100 100	DN8A DN8			18-75C15NT1110	230C15NT1110 230C15NT1800
18	.5	3.3	2.3	15	100	DN6B	24C18FT330	48C18FT330		230013N11000 *
18	.5	6	4.2	15	100	DN6A	24C18FT600	48C18FT600		
18	.5	9.2	6.4	15	100	DN8A			18-75C18NT920	230C18NT920
18 20	.5 .5	15 3	10.5 2.1	15 15	100	DN8 DN6B	24C20FT300	48C20FT300		230C18NT1500
20	.5	5.6	3.9	15	100	DN6A	24C20FT560	48C20FT560		*
20	.5	8.6	6	15	100	DN8A			18-75C20NT860	230C20NT860
20	.5	14	9.8	15	100	DN8				230C20NT1400
24	.5	2.5	1.8	15	100	DN6B	24C24FT250	48C24FT250		*
24 24	.5 .5	5 7.5	3.5 5.3	15 15	100 100	DN6A DN8A	24C24FT500	48C24FT500	18-75C24NT750	230C24NT750
24	.5	12	8.4	15	100	DN8				230C24NT1200
25	.5	2.4	1.6	15	100	DN6B	24C25FT240	48C25FT240		*
25	.5	4.8	3.3	15	100	DN6A	24C25FT480	48C25FT480	40.75005NT700	000005NT700
25 25	.5 .5	7.2 11.2	5 7.8	15 15	100 100	DN8A DN8			18-75C25NT720	230C25NT720 230C25NT1120
28	.5	2.1	1.5	15	100	DN6B	24C28FT210	48C28FT210		*
28	.5	4.2	2.9	15	100	DN6A	24C28FT420	48C28FT420		*
28	.5	6.2	4.3	15	100	DN8A			18-75C28NT620	230C28NT620
28	.5	10	7	15	100	DN8	24C30ET200	48C30ET200		230C28NT1000
30 30	.5 .5	2 4	1.4 2.8	25 25	150 150	DN6B DN6A	24C30FT200 24C30FT400	48C30FT200 48C30FT400		*
30	.5	5.6	3.9	25	150	DN8A			18-75C30NT560	230C30NT560
30	.5	9	6.3	25	150	DN8				230C30NT900
32	1	1.9	1.3	25	150	DN6B	24C32FT190	48C32FT190		*
32 32	1	3.7 5.4	2.5 3.7	25 25	150 150	DN6A DN8A	24C32FT370	48C32FT370	18-75C32NT540	230C32NT540
32	1	8.6	6	25	150	DN8			10-75G32N1540 	230C32NT860
36	1	1.7	1.2	25	150	DN6B	24C36FT170	48C36FT170		*
36	1	3.3	2.3	25	150	DN6A	24C36FT330	48C36FT330		
36	1	5	3.5	25	150	DN8A			18-75C36NT500	230C36NT500
36 40	1	8 1.5	5.6 1	25 25	150 150	DN8 DN6B	24C40FT150	48C40FT150		230C36NT800
40	1	3	2.1	25	150	DN6A	24C40FT300	48C40FT300		*
40	1	4.3	3	25	150	DN8A			18-75C40NT430	230C40NT430
40	1	7	4.9	25	150	DN8		4004057400		230C40NT700
48	1	1.2	.8	25	150	DN6B	24C48FT120	48C48FT120		*
48 48	1	2.5 3.7	1.7 2.6	25 25	150 150	DN6A DN8A	24C48FT250	48C48FT250	18-75C48NT370	230C48NT370
48	i	6	4.2	25	150	DN8				230C48NT600
50 to 125							See next page!			
									/dc input and provide 30 ar	

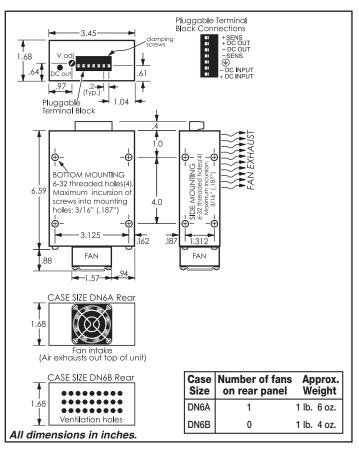
* See pages C1-C2 for information on Mini Switching Power Supplies that will operate on a 120-180 Vdc input and provide 30 and 50 watt DC outputs.

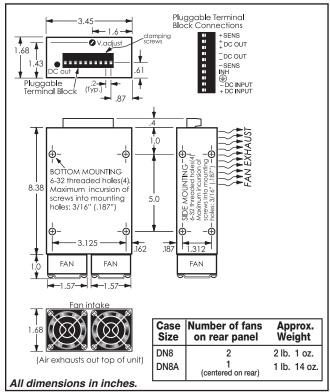


NARROW PROFILE

Narrow Profile DC-DC CONVERTERS (continued)

Nominal Adjust Output Range		Output Current Amps. at		Ripple mV (@ 25 MHz BW)		Case	18 to 36 Vdc Input	36 to 75 Vdc Input	18 to 75 Vdc Input	110 to 350 Vdc Input
Voltage	±V	40°C	71°C	RMS	P-P	Size	Model	Model	Model	Model
50	1	3.3	2.3	50	150	DN8A				230C50NT330
50	1	5	3.5	50	150	DN8				230C50NT500
55	1	3	2.1	50	150	DN8A				230C55NT300
55	1	4.5	3.2	50	150	DN8				230C55NT450
60	1	2.8	1.9	50	150	DN8A				230C60NT280
60	1	4.2	2.9	50	150	DN8				230C60NT420
70	1	2.4	1.7	67	200	DN8A				230C70NT240
70	1	3.6	2.5	67	200	DN8				230C70NT360
75	1	2.2	1.5	67	200	DN8A				230C75NT220
75	1	3.3	2.3	67	200	DN8				230C75NT330
80	1	2.1	1.4	67	200	DN8A				230C80NT210
80	1	3.1	2.2	67	200	DN8				230C80NT310
90	1	1.8	1.3	100	300	DN8A				230C90NT180
90	1	2.8	1.9	100	300	DN8				230C90NT280
100	1	1.7	1.2	150	450	DN8A				230C100NT170
100	1	2.5	1.8	150	450	DN8				230C100NT250
110	1	1.5	1.1	150	450	DN8A				230C110NT150
110	1	2.3	1.6	150	450	DN8				230C110NT230
120	1	1.4	1	150	450	DN8A				230C120NT140
120	1	2.1	1.5	150	450	DN8				230C120NT210
125	1	1.3	0.9	150	450	DN8A				230C125NT130
125	1	2	1.4	150	450	DN8				230C125NT200







MOUNTING KITS

WALL MOUNTING KITS

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, LM6A*, LM8A*, LM10A*, M6, M9, M13, RM6, RW6 TG5, TG6, TG9, TG13, TH11, WG7, WM6, WM9, Y3, Y5, Y6, YH11, YA

*For rear mounting brackets horizontally on LM cases only, use GBR Mounting Kit



-1.125-

All dimensions in inches.

.375

For 'Narrow Profile' power supplies:

NP6 Mounting Kit (#6-32 mounting holes)

Can be used on these case sizes:

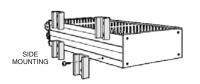
AMC, CN8T, DN6B, DN6A, DN8A, DN8, F6T, F8T, N8T, WL7, WL9, WN6A, WN6B, WN8, WN8A, WN8B, TN6T

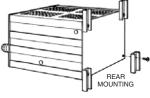
NP6L Mounting Kit (#6-32 mounting holes)

Can be used on these case sizes:

CN8H, N8H, TN8H

Model NP6L consists of two brackets 1.5" long as shown above, and two 2.5" long brackets (to extend beyond heat sink).





DIN RAIL MOUNTING KITS

CH35DIN Mounting Kit (Horizontal mounting) Can be used on these case sizes: RM6. RW6

GH35DIN Mounting Kit (Horizontal mounting)

Can be used on these case sizes:

CM6 DG5 G3 GT5 M6 TG5 **Y3** CM9 DG6 G5 GT6 M9 TG6 Y5 CM13 DG9 G₅D GT9 M13 TG9 Y6 G6 **GT13 TG13** G9

G13

GR35DIN Mounting Kit (Rear mounting)

Can be used on these case sizes:

CM6 DG5 G3 GT5 HD345 M6 RM6 TG5 Y3 CM9 DG6 G5 GT6 HD355 M9 RW6 TG6 Y5 G5D GT9 (GR35DIN can be used, but is TG9 Y6 DG9 not recommended on case sizes: G6 G13, GT13, M13, TG13)

G9

LR35DIN Mounting Kit (Rear mounting) **LV35DIN Mounting Kit** (Vertical mounting)

LH35DIN Mounting Kit (Horizontal mounting)

Can be used on these case sizes: LM6A, LM8A, LM10A

GH35DIN





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 WN8 DN8A WN8A WN8B

NPR35DIN Mounting Kit (Rear mounting)

Can be used on these case sizes:

CN8H F6T H8N TN6T CN8T F8T N8T TN8H

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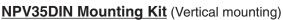




LR35DIN



NPV35DIN



Can be used on these case sizes:

CN8H DN6A F6T N8H TN6T WN6A CN8T DN6B F8T N8T TN8H WN6B DN8 WN8 DN8A WN8A WN8B

WH35DIN Mounting Kit (Horizontal mounting)

Can be used on these case sizes: WM6, WM9

WL35DIN Mounting Kit (Vertical mounting) WLH35DIN Mounting Kit (Horizontal mounting) Can be used on these case sizes: WL7, WL9

WLH35DIN

Locking

ORDERING INFO / TERMS & 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 or Melbourne, FL, 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. ('EXW Factory' if outside the 50 United States.) All prices and specifications are subject to change without notice.

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, FedEx, DHL (international orders) 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 to certain U.S. territories requiring customs forms.)

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. This option requires two additional days and is not available on High Voltage, Mini Encapsulated, Rack Mounting, and Gold Box Switching models.

TAGGING: 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.

ACOPIAN IS AN ISO 9001 CERTIFIED COMPANY