

# DCMOD® AL-085D

## DC INPUT / ITE APPROVED

### 85 WATT POWER PLATFORM

5.00 x 3.00 x 1.20" | 127.0 x 76.2 x 30.48mm



### DESCRIPTION

UNIPOWER's DCMOD® AL-085D SERIES is an 85 Watt DC Input Power Supply platform with both standard and configurable models featuring output voltage(s) that can be quickly configured to order while maintaining all international safety approvals.

These power supplies are available with 24V or 48V Input Ranges and single or quad output configurations ranging from 1.5 to 48 VDC. The AL-085D features an industry-standard footprint, international safety approvals, Class B emissions; and -20 ~ +70°C operation (see derating).

DCMOD® UPGRADES include a multitude of output voltage configurations, extended temperature operating range, isolated outputs, attached wire harnesses and much, much more. All these modifications are available without any impact on safety approvals to reduce both development cost and time to market.

### FEATURES

- ◆ 24V (18-36Vin) or 48V (36-72Vin) Input Ranges
- ◆ Industry-Standard 3" x 5" Footprint
- ◆ 1 or 4 Outputs configurable from 1.5-48VDC
- ◆ International Safety Approvals
- ◆ >500k Hours MTBF, Demonstrated
- ◆ Optional -40°C Guaranteed Start-Up
- ◆ Double Sided PC Board



Contact UNIPOWER to discuss your application and define the right part number for your specific application:

Tel: +1-954-905-1070

Email: [the.power.solution@unipowerco.com](mailto:the.power.solution@unipowerco.com)



**FIVE YEAR WARRANTY**

### INTERNATIONAL STANDARDS

UL/cUL 60950-1 2nd Ed.  
 EN60950-1 2nd Ed.  
 CB Report, IEC60950-1  
 CE Mark (LVD)

[www.unipowerco.com](http://www.unipowerco.com)

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For the AC input version see [EASYMOD AL-085U](#) datasheet

For the Medical Approved version see [MEDIMOD AL-085UM](#) datasheet

**"IF WHAT YOU SEE IS WHAT YOU DON'T WANT, IT CAN EASILY BE CHANGED."** The DCMOD® family of switching power supplies has been designed with two precepts; (1) the laws of physics are immutable, and (2) the satisfaction of customer requirements and needs is paramount.

A host of modifications, only some of which are listed below, can and will be performed on products for customer programs requiring as few as 250 units per year. These "mods" are available at nominal premium (if any), normally without non-recurring engineering costs (although a one time documentation fee may be incurred), and usually with all safety agency approvals in place. This minimizes both product development cost and new product time to market. Effectively, DCMODs® allow small program requirements the luxury of costly custom power supply designs.

**TYPICAL MODIFICATIONS**

- Unique Output Combinations from 1.5 to >48 volts
- Isolated Outputs
- Low Output Ripple and Noise
- Extended Temperature Operating Range
- -40°C Start-Up
- Zero Load Operation

**FLEXIBLE OUTPUT CONFIGURATION GUIDELINES**

with 12, 24 or VDC Input and -20-50°C Operation

**Single Output Capabilities**

OUTPUT CURRENT	1.5~3.3V	5V	12V	15V	24V	48V
MINIMUM	0A	0A	0A	0A	0A	0A
CONVECTION <sup>(3)</sup>	13A	13A	5.4A	4.3A	2.7A	1.4A
15 CFM AIR <sup>(4)</sup>	17A	17A	7.1A	5.7A	3.5A	1.8A
PEAK <sup>(5)</sup>	19.5A	19.5A	8.1A	6.5A	4.0A	2.0A

**Multiple Output Capabilities**

OUTPUT	DC OUTPUT	MIN	CON <sup>(3)</sup>	AIR <sup>(4)</sup>	PEAK <sup>(4, 5)</sup>
V1	1.5 ~ 48V <sup>(7)</sup>	1.3A <sup>(2, 13)</sup>	13A	17A	19.5A
V2	1.5 ~ 48V <sup>(8)</sup>	0.6A <sup>(2, 13)</sup>	6A	8.5A	9A
V3	1.5 ~ 48V <sup>(8)</sup>	0.3A <sup>(2, 13)</sup>	3A	5A	5.5A
V4	1.5 ~ 48V <sup>(8)</sup>	0.3A <sup>(2, 13)</sup>	3A	3.5A	4.0A

(1) Full power out on V3-V4 with minimal V1 and V2 loading—Option.  
 (2) 10% minimum load for stated regulation on multiple O/P units.  
 (3) Convection cooling.  
 (4) 15 CFM forced air cooling conditions.  
 (5) 30 seconds maximum duration.  
 (6) Most output combinations from 1.5 to 48 Volts possible; up to maximum rated Current / Power...Consult UNIPOWER.

(7) Specify 01V increments.  
 (8) Specific output voltage is current dependent.  
 (9) Regulation may degrade under some output Consult UNIPOWER.  
 (10) Consult UNIPOWER for Model #.  
 (11) For outputs >48 Volts, consult UNIPOWER.  
 (12) 10% minimum of marked rating.

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For the Medical Approved version see [MEDIMOD AL-085UM](#) datasheet | For the AC Input version see [EASYSMOD AL-085U](#) datasheet.

# SPECIFICATIONS

Typical at Nominal Line, Full Load and 25°C Unless Otherwise Noted.

### INPUT

Input Voltage Range Options.....	18-36 or 36-72 VDC Ranges
Input Current @ 24 VDC Input.....	6A Max
Input Current @ 48 VDC Input.....	4A Max
Fusing @ 24 VDC Input.....	8A
Fusing @ 48 VDC Input.....	5A

### OUTPUT

Output Power .....	65W Convection / 85W with 15 cfm Airflow
Efficiency.....	75% Typical
Adjustment Range (V1 Only).....	±5%
Ripple / Noise, max.....	1% pk-pk max
Line Regulation.....	Max ±0.2%
Load Regulation @ 60% ±40% Full Load	
V1.....	±3% max
V2-V4.....	±5% max
Cross Regulation @ 60% ± 40% Full Load	
V1: Change in V1 @75 ±25% F/L.....	±0.5%
V2 - V4: Change in V1 @75 ±25% F/L.....	±5% max
Overshoot Protection (V1 Only).....	>130% (Latch Off)
Power Limit .....	>120% (Auto-Recovery)
Overshoot (all outputs).....	10% max
Response Time.....	500 µSec (25-75% step load)
Switching Frequency.....	60KHz (typical)

### ENVIRONMENTAL

Operating Temp. Range .....	-20°C to +50°C (Full Load)
	Consult factory for -40°C Guaranteed Start-Up and Industrial Temperature Range options
Output Current Derating .....	2.5%/°C, 50°C to 70°C
Storage Temp. Range .....	-40°C to + 85°C
Humidity.....	5% to 95%, Non-Condensing
MTBF, Demonstrated .....	>500,000 Hours
Cooling .....	15 cfm Airflow for Full Power
Altitude.....	10,000 feet

### PHYSICAL SPECIFICATIONS

Case Dimensions .....	5.00 x 3.00 x 1.20" / 127 x 76.2 x 30.48mm
Weight .....	0.75 lbs. (0.34 kg.)
Vibration from 10 - 55Hz.....	1.0G Peak
	(3 orthogonal axes @ 1 octave/min, 5 minute dwell @ 4 major resonances)

### SAFETY STANDARDS

UL60950-1 2nd Ed., EN60950-1 2nd Ed., CB REPORT (IEC 60950-1), CE MARK (LVD)

### EMI STANDARDS

FCC Class A & VDE Class A, CISPR 22; EN 55022 Class A (Class B optional, consult factory)

## OUTLINE DRAWING

### CONNECTOR 1

(MOLEX#09-65-2058 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3051)

PIN1.....	GROUND
PIN2.....	-VIN
PIN3.....	-VIN
PIN4.....	+VIN
PIN5.....	+VIN

### CONNECTOR 2 (single output)

(MOLEX#09-65-2088 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3081)

PIN1.....	V1
PIN2.....	V1
PIN3.....	V1
PIN4.....	V1
PIN5.....	RET
PIN6.....	RET
PIN7.....	RET
PIN8.....	RET

### CONNECTOR 2 (multi-output)

(MOLEX#09-65-2088 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3081)

PIN1.....	V2
PIN2.....	V1
PIN3.....	V1
PIN4.....	RET
PIN5.....	RET
PIN6.....	V3
PIN7.....	V4
PIN8.....	V4 RET

