

# DCMOD® AF-180D SERIES

DC INPUT / ITE APPROVED

180 WATT POWER PLATFORM

6.80 x 3.80 x 1.50" | 172.7 x 96.5 x 38.1mm



## DESCRIPTION

UNIPOWER's DCMOD® AF-180D SERIES is a 180 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 12 / 24 / 48 VDC Input Ranges and single or quad output configurations ranging from 1.5 to 48 VDC. The AF-180D feature 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, optional covers (with or without fan), 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

- ◆ 12V, 24V or 48V DC Inputs
- ◆ 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)

NORTH AMERICA CALL: +1-954-905-1071 • LATIN AMERICA CALL: +1-954-905-1078 • EUROPE CALL: +44 1903 768200

For the AC input version see [EASYSMOD AF-180P](#) datasheet

For the Medical Approved version see [MEDIMOD AF-180PM](#) 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
- Power Fail / Power Good Signals
- Enable / Inhibit
- Isolated Outputs
- Low Output Ripple and Noise
- Cover & Fan Assembly
- Extended Temperature Operating Range
- -40°C Start-Up
- Zero Load Operation
- Remote Sense
- Remote On / Off

**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>	20.0A	20.0A	11.0A	9.5A	5.5A	2.75A
30 CFM AIR <sup>(4)</sup>	36.0A	36.0A	15.0A	12.0A	7.5A	3.75A
PEAK <sup>(5)</sup>	41.0A	41.0A	17.0A	14.0A	8.35A	4.25A

**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>	2.0A <sup>(2, 13)</sup>	20.0A	30.0A	35.0A
V2	1.5 ~ 48V <sup>(8)</sup>	1.2A <sup>(2, 13)</sup>	12.0A	18.0A	20.0A
V3	1.5 ~ 48V <sup>(8)</sup>	0.4A <sup>(2, 13)</sup>	4.0A	6.0A	8.0A
V4	1.5 ~ 48V <sup>(8)</sup>	0.4A <sup>(2, 13)</sup>	4.0A	6.0A	8.0A

(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) 30 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) Cover and custom sheet metal available.  
 (13) 10% minimum of marked rating

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

**Call: +1-954-905-1070 • Email: [the.power.solution@unipowerco.com](mailto:the.power.solution@unipowerco.com)**

For the Medical Approved version see [MEDIMOD AF-180PM](#) datasheet | For the AC Input version see [EASYSMOD AF-180P](#) datasheet.

# SPECIFICATIONS

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

### INPUT

Input Voltage Range Options.....	10-18 / 18-36 / 36-72 VDC Ranges
Input Current @ 12 VDC Input.....	20A Max
Input Current @ 24 VDC Input.....	12A Max
Input Current @ 48 VDC Input.....	7A Max
Fusing @ 12 VDC Input Range.....	30A Max
Fusing @ 24 VDC Input Range.....	20A Max
Fusing @ 48 VDC Input Range.....	10A Max

### OUTPUT

Output Power .....	130W Convection / 180W with 30 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 V2 - V4.....	±0.5%
V2 - V4: Change in V1 @75 ±25% F/L .....	±5% max
Overvoltage 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 .....	30 cfm Airflow for Full Power
Altitude.....	10,000 feet

### PHYSICAL SPECIFICATIONS

Case Dimensions .....	6.80 x 3.80 x 1.50" / 172.7 x 96.5 x 38.1mm
Weight .....	1.5 lbs. (0.68 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)  
(not including 12VDC input models)

### EMI STANDARDS

FCC Class A & VDE Class A, CISPR 22: EN 55022 Class A  
(Class B available. Consult factory.)

# OUTLINE DRAWING

### CONNECTOR 1

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

### CONNECTOR 2 (single output)

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

### CONNECTOR 2 (multi-output)

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

Consult factory for optional Molex Connectors

