

DESCRIPTION

UNIPOWER's **AL-085 SERIES** is an 85 Watt 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 Universal AC Input and single or quad output configurations ranging from 1.5 to 48 VDC. The AL-085 features an industry-standard footprint, international safety approvals, Class B emissions; and -20 ~ +70°C operation (see derating).

EASYMOD UPGRADES include a multitude of output voltage configurations, optional covers (with or without fan), extended temperature operating range, isolated outputs, DC inputs, 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

- ◆ Universal AC Input Range (90-264 VAC)
- ◆ Industry-Standard 3" x 5" U-Frame Footprint
- ◆ 1 or 4 Outputs configurable from 1.5~48VDC
- ◆ International Safety Approvals
- ◆ >250k Hours MTBF (MIL-217F)
- ◆ Optional -40°C Guaranteed Start-Up



**Contact Unipower to discuss
your application and define
the right part number for your
specific application.**

TWO-YEAR WARRANTY

INTERNATIONAL STANDARDS

UL/cUL 60950-1
CB Report, IEC60950-1
CE Mark (LVD)

FLEXIBLE OUTPUT CONFIGURATION GUIDELINES

with 90-264 VAC 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 ⁽³⁾	13A	13A	5.4A	4.3A	2.7A	1.4A
15 CFM AIR ⁽⁴⁾	17A	17A	7.1A	5.7A	3.5A	1.8A
PEAK ⁽⁵⁾	19.5A	19.5A	8.1A	6.5A	4.0A	2.0A

Multiple Output Capabilities

OUTPUT	DC OUTPUT	MIN	CON ⁽³⁾	AIR ⁽⁴⁾	PEAK ^(4, 5)
V1	1.5 ~ 48V ⁽⁷⁾	1.3A ^(2,13)	13A	17A	19.5A
V2	1.5 ~ 48V ⁽⁸⁾	0.6A ^(2,13)	6A	8.5A	9.0A
V3	1.5 ~ 48V ⁽⁸⁾	0.3A ^(2,13)	3A	5A	5.5A
V4	1.5 ~ 48V ⁽⁸⁾	0.3A ^(2,13)	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 0.1V 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.

STOCKED / OFF-THE-SHELF MODELS

Listed below are common configurations stocked by UNIPOWER for immediate delivery.

Single Output Models

MODEL	V1	MIN	CON	AIR	PEAK
AL-085-S1-STD	5V	0A	13A	17A	19.5A
AL-085-S2-STD	12V	0A	5.4A	7.1A	8.1A
AL-085-S4-STD	24V	0A	2.7A	3.5A	4.0A
AL-085-S5-STD	48V	0A	1.4A	1.8A	2.0A

Quad Output Models

MODEL	V1	MIN	CON	AIR	V2	MIN	CON	AIR	V3	MIN	MAX	V4	MIN	MAX
AL-085U-Q1221-STD	+5V	1A	10A	12A	+12V	0.3A	2A	3A	-12V	0.3A	3A	-5V	0.4A	4A
AL-085U-Q1331-STD	+5V	1A	10A	12A	+15V	0.3A	2A	3A	-15V	0.3A	3A	-5V	0.4A	4A
AL-085U-Q1224-STD	+5V	1A	10A	12A	+12V	0.3A	2A	3A	-12V	0.3A	3A	+24V	0.2A	2A
AL-085U-Q1334-STD	+5V	1A	10A	12A	+15V	0.3A	2A	3A	-15V	0.3A	3A	+24V	0.2A	2A
AL-085U-Q0122-STD	+3.3V	1A	10A	12A	+5V	0.6A	6A	8A	+12V	0.3A	3A	-12V	0.3A	3A
AL-085U-Q0133-STD	+3.3V	1A	10A	12A	+5V	0.6A	6A	8A	+15V	0.3A	3A	-15V	0.3A	3A
AL-085U-Q0124-STD	+3.3V	1A	10A	12A	+5V	0.6A	6A	8A	+12V	0.3A	3A	+24V	0.2A	2A

MIN = Minimum Load Required for specified regulation

CON = Maximum continuous output current with Convection Cooled Operation (Total power not to exceed 65 Watts continuous)

AIR = Maximum continuous output current with 15 CFM Airflow Operation (Total power not to exceed 85 Watts continuous)

SPECIFICATIONS

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

INPUT

Input Voltage Range Options.....	90-264 VAC
Frequency.....	47-63Hz
Power Factor.....	EN61000-3-2 Compliant
Inrush Current.....	35A Max (cold start)
Input Current @ 115VAC.....	2.5A max
Fusing.....	3.15A / 250VAC

OUTPUT

Output Power	65W Convection / 85W with 15 cfm Airflow
Hold-up Time	16mSec
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-V3	±5% max
Cross Regulation @ 60% ± 40% Full Load	
V1: Change in V2 - V3.....	±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, 25°C (MIL217F)	>250,000 Hours
Cooling	15 cfm Airflow for Full Power
Immunity.....	EN61000-4-2; -3; -4; -5; -6; -8; -11
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, CB REPORT (IEC 60950-1), CE MARK (LVD)

EMI STANDARDS

FCC Class B & VDE Class B, CISPR 22; EN 55022 Class B

OUTLINE DRAWING

CONNECTOR 1

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

PIN1.....	GROUND
PIN2.....	KEY
PIN3.....	NEUTRAL
PIN4.....	KEY
PIN5.....	LINE

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

