cᴿᴜus Ⓓ CB CE ✚

DESCRIPTION

UNIPOWER's **AL-070UM SERIES** is a 70 Watt Medical 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 in single or triple output configurations with outputs ranging from 1.5 to 48 VDC. The AL-070UM feature an industry-standard footprint; universal AC input; 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

◆ Industry-Standard 3" x 5" Footprint

◆ 1 or 3 Outputs configurable from 1.5~48VDC

◆ Medical Safety Approvals

◆ >250k Hours MTBF (MIL-217F)

◆ Optional -40°C Guaranteed Start-Up
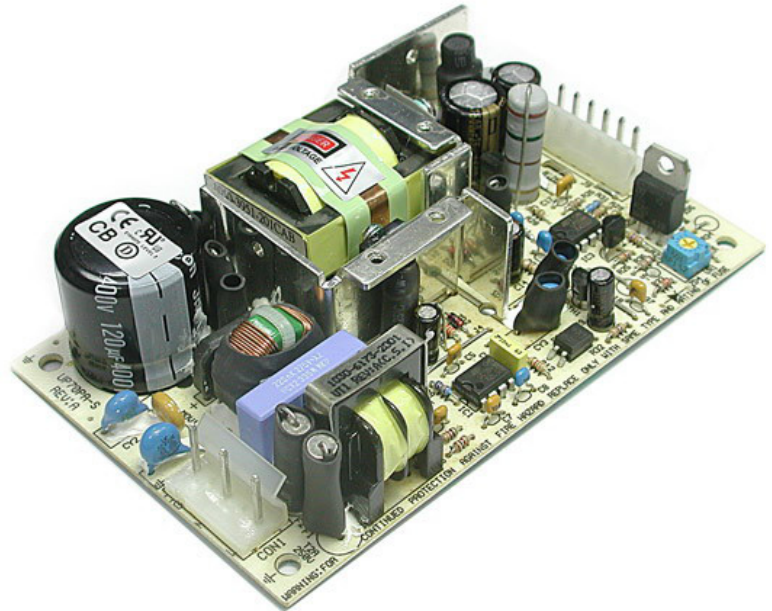
Contact Unipower to discuss your application and define the right part number for your specific application.

TWO-YEAR WARRANTY

INTERNATIONAL STANDARDS

UL/cUL 60601-1
DEMKO EN60601-1
CB Report, IEC60601-1
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]	10A	10A	4.2A	3.3A	2.1A	1.1A
10 CFM AIR [4]	14A	14A	5.9A	4.6A	3.0A	1.4A
PEAK [5]	15A	15A	6.5A	5.0A	3.5A	1.5A

Multiple Output Capabilities

OUTPUT	DC OUTPUT	MIN	CON [3]	AIR [4]	PEAK [4, 5]
V1	1.5 ~ 48V [7]	0.80A [2,13]	8.0A	14.0A	15.0A
V2	3.3 ~ 48V [8]	0.40A [2,13]	4.0A	7.0A	8.0A
V3	1.5 ~ 48V [8]	0.20A [2,13]	2.0A	2.5A	3.0A

(1)...Full power out on V3 with minimal V1 and V2 loading—Option.
(2)...10% minimum load for stated regulation on multiple O/P units.
(3)...Convection cooling.
(4)...10 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.

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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-070UM-S1-STD	5V	0A	10.0A	14.0A	15.0A
AL-070UM-S2-STD	12V	0A	4.2A	5.9A	6.5A
AL-070UM-S4-STD	24V	0A	2.1A	3.0A	3.5A
AL-070UM-S5-STD	48V	0A	1.1A	1.4A	1.5A

Triple Output Models

MODEL	V1	MIN	CON	AIR	V2	MIN	CON	AIR	V3	MIN	CON	AIR
AL-070UM-T122-STD	+5V	0.4A	4A	6A	+12V	0.4A	3A	4A	-12V	0.2A	1.5A	2A
AL-070UM-T133-STD	+5V	0.4A	4A	6A	+15V	0.4A	3A	4A	-15V	0.2A	1.5A	2A
AL-070UM-T124-STD	+5V	0.4A	4A	6A	+12V	0.4A	3A	4A	+24V	0.2A	1A	1.5A
AL-070UM-T012-STD	+3.3V	0.4A	4A	6A	+5V	0.4A	3A	4A	+12V	0.2A	1.5A	2A
AL-070UM-T013-STD	+3.3V	0.4A	4A	6A	+5V	0.4A	3A	4A	+15V	0.2A	1.5A	2A
AL-070UM-T014-STD	+3.3V	0.4A	4A	6A	+5V	0.4A	3A	4A	+24V	0.2A	1A	1.5A

MIN = Minimum Load Required for specified regulation
CON = Maximum continuous output current with Convection Cooled Operation (Total power not to exceed 50 Watts continuous)
AIR = Maximum continuous output current with 10 CFM Airflow Operation (Total power not to exceed 70 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
Inrush Current... 30A Max (cold start)
Input Current @ 115VAC .... 1.5A max
Leakage Current...<100µA @ 264VAC
Fusing, dual fuse ....Dual 2A / 250VAC

OUTPUT
Output Power ....50W Convection / 70W with 10 cfm Airflow
Hold-up Time 16mSec
Efficiency .... 70% 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 - V3: Change in V1 @75 ±25% F/L .... ±5% max
Overvoltage Protection (V1 Only).......................>125% (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 ....10 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 1.00" / 127 x 76.2 X 25.4mm
Weight .... 0.56 lbs. (0.25 kg.)
Vibration from 10 - 55Hz... 1.0G Peak
(3 orthogonal axes @ 1 octave/min, 5 minute dwell @ 4 major resonances)

SAFETY STANDARDS
UL60601-1, DEMKO EN60601-1, CB REPORT (IEC 60601-1), 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................................Key
PIN3.....................NEUTRAL
PIN4................................Key
PIN5.............................LINE

CONNECTOR 2 (single output)
(MOLEX#09-65-2068 OR EQUIVALENT;
MATING CONNETOR= MOLEX#09-50-3061)
PIN1 .... V1
PIN2 .... V1
PIN3................................ V1
PIN4..............................RET
PIN5..............................RET
PIN6..............................RET

CONNECTOR 2 (multi-output)
(MOLEX#09-65-2068 OR EQUIVALENT;
MATING CONNETOR= MOLEX#09-50-3061)
PIN1 .... V2
PIN2 .... V1
PIN3.............................. V1
PIN4..............................RET
PIN5..............................RET
PIN6................................ V3