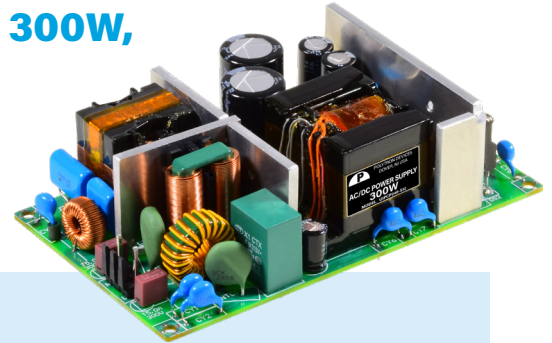


# AC-DC POWER SUPPLY

## UNIVERSAL INPUT RANGE, PEAK POWER UP TO 300W, 3" X 5" OPEN FRAME PACKAGE

### INDUSTRIAL APPLICATIONS

#### UIPCP240 SERIES



#### FEATURES

- Peak Power
- 3,000Vac Reinforced Insulation
- Adjustable Output Voltage
- Internal EN55032 Class B Filter
- Low Leakage Current
- No Minimum Load Required
- Operating Altitude 5,000 meter
- Remote ON/OFF
- Class I and II Protection
- Over Current Protection
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- OVCIII
- Safety Meets:  
IEC/ EN/ UL 62368-1
- RoHS and REACH Compliant

#### SELECTION GUIDE All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

Input Voltage Range Vac	Output Voltage Vdc	Output Current		Output Power		Efficiency %	Maximum Capacitor Load $\mu$ F	Model Number
		Forced Air Cooling With 10 CFM @Full Load A	Maximum Peak Power W	@Full Load W	Maximum Peak Power W			
85 - 264	12	20	25	240	300	90	10,000	UIPCP240-S12
85 - 264	15	16	20	240	300	90	6,800	UIPCP240-S15
85 - 264	24	10	12.5	240	300	90	2,400	UIPCP240-S24
85 - 264	28	8.58	10.72	240	300	90	2,000	UIPCP240-S28
85 - 264	36	6.67	8.34	240	300	90	1,200	UIPCP240-S36
85 - 264	48	5	6.25	240	300	91	680	UIPCP240-S48
85 - 264	54	4.45	5.56	240	300	91	680	UIPCP240-S54

#### PACKAGE OPTIONS:

- **Class I:** No Suffix
- **Class II:** Suffix "B"
- **Molex:** No Suffix
- **Terminal Block:** Suffix "T"
- **Fan:** No Suffix
- **No external fan with fixed fan speed control:** Suffix "F2"
- **Remote On/Off:** Suffix "R"

Input Specifications		
Operating input voltage range	85 Min., 264 Max., Vac	AC Input
	88 Min., 370 Max., Vdc	DC Input
Input frequency, Hz	47 Min., 63 Max.	AC Input
Input current, A	3.8 Max.	100 Vac and at 240W full load
	1.5 Max.	240 Vac and at 240W full load
No load input power, W	3 Max.	230VAC, Option "-F3" (with Fan)
	0.3 Max.	Without Fan
Leakage current, $\mu$ A	250 Typ.	264 Vac
Power factor	0.95	
Start up time, ms	1,500 Max.	
Rise time, ms	20 Typ.	
Hold up time, ms	25 Min.	115 Vac and full load
Input inrush current, A	80 Typ.	230 Vac, cold start at 25°C
Input protection	T5.0A/300VAC	Internal fuse

Output Specifications		
Output power, w	240 Max.	Forced air cooling @ 230VAC
	180 Max.	Natural convection @ 230VAC
Output peak power, w	300 Max.	
Output peak power time, s	10 Max.	
Output peak power duty, %	20 Max.	
Average operation power, %	80 Typ.	% of Nominal full load
Initial set voltage accuracy, %	-1.0 Min., 1.0 Max.	230 Vac and full load
Line regulation, %	-0.2 Min., 0.2 Max.	Low line to high line at full load
Load regulation, %	-0.5 Min., 0.5 Max.	No load to full load,
	-0.4 Min., 0.4 Max.	10% load to 90% load
Voltage adjustability, %	-10 Min., 10 Max.	12 ~ 48Vout
	-20 Min., 0 Max.	54Vout
Minimum load, %	0 Typ.	
Ripple and noise, mVp-p		Measured by 20MHz bandwidth
	120 Typ.	With a 10 $\mu$ F/25V 1206 X7R MLCC, 12Vout, 15Vout
	150 Typ.	
	240 Typ.	
	280 Typ.	With a 1 $\mu$ F/50V 1206 X7R MLCC, 24Vout, 28Vout, 36Vout
	360 Typ.	
	480 Typ.	With a 1 $\mu$ F/100V 1206 X7R MLCC, 48Vout, 54Vout
	540 Typ.	
Temperature coefficient, %/°C	-0.02 Min., 0.02 Max.	
Transient response	3% Vout Typ.	Load step from 100 ~ 75% change at 2.5A/ $\mu$ s, peak deviation
	1000 $\mu$ s Typ.	Recovery time
Over voltage protection, %	130 Typ.	% of Vout(nom); 12 ~ 36Vout; Latch mode
	59.5 Max.	% of Vout(nom); 48 ~ 54Vout; Latch mode
Over load protection, %	180 Typ.	% of Iout rated; Hiccup mode
Remote ON/OFF (Option "-L" suffix)	0 ~ 0.8 VDC or Open	External power supply is required Between +Ctrl and -Ctrl, Output OFF
	4.5 ~ 12.5 VDC	Output ON
	Input current	20 Max mA
Fan power supply (Option "-F3" suffix)	12V / 300mA	Fixed fan speed function
Short circuit protection	Continuous, automatic recovery	

### General Specifications

Isolation voltage, Vac	1 minute, reinforced insulation	Input to output	3,000 Min.		
		Input (Output) to F.G.	2,000 Min.		
Isolation resistance, G $\Omega$	500 Vdc		0.1 Min.		
Switching frequency, kHz	230 Vac, Full load		60 Typ.		

### Environmental Specifications

Operating ambient temperature, °C		With derating	-40 Min.		+85 Max.
Storage temperature range, °C			-40 Min.		+85 Max.
Operating altitude, m					5,000 Max.
Thermal shock			MIL-STD-810F		
Shock			IEC60068-2-27		
Vibration			IEC60068-2-6		
Relative humidity	Non-condensing		5% to 95% RH		

### Physical Specifications

Design meet safety standard	IEC/ EN/ UL 62368-1	
Dimensions	5" x 3" x 1.32" 127 x 76.2 x 33.6mm	Open Type
Weight	340g (11.99oz)	
MTBF	7.252 x 10 <sup>5</sup> hrs, MIL-HDBK-217F Ta=25°C, Full load	

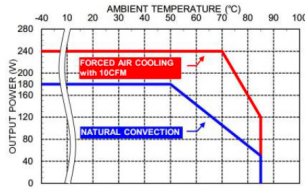
### EMC Specifications

Specifications	Conditions	Level	
EMI	EN55032, and FCC Part 15	Conducted	Class B
		Radiated	Class B
Harmonic currents	EN61000-3-2	Full Load	Class D
Voltage flicker	EN61000-3-3		
EMS	EN55035		
ESD	EN61000-4-2		Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	DM ± 1kV and CM ± 2kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	30 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11		

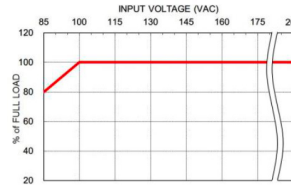
**Note:**

**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

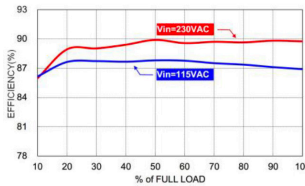
**Characteristic Curve**



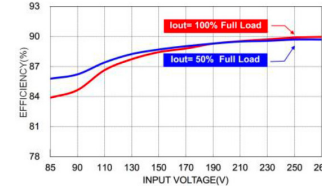
Derating Curve vs. Ambient Temperature  
Vin=230VAC Open Type



Derating Curve vs. Input Voltage



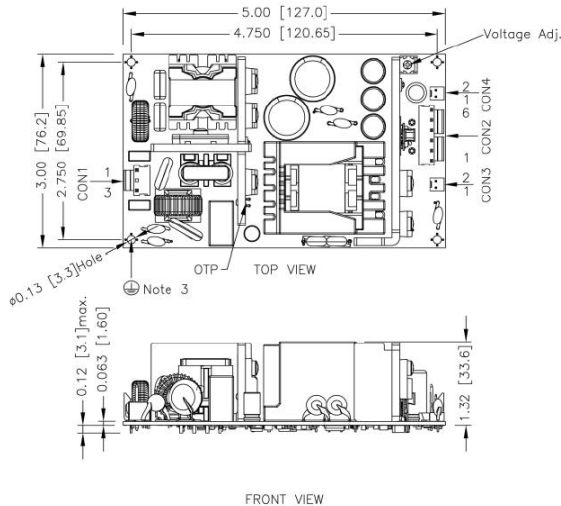
UIPCP240-S24 Efficiency vs. Output Load



UIPCP240-S24 Efficiency vs. Input Voltage

**Mechanical Drawing**

**Open Type: option "- M" & "- J" Suffix**



- All dimensions in inch [mm]  
Tolerance :  $x.xx \pm 0.02$  [ $x.x \pm 0.5$ ]  
 $x.xxx \pm 0.01$  [ $x.xx \pm 0.25$ ]
- The screw locked torque: MAX 3.4Kgf.cm/0.33N.m
- The screws holes can be considered as PE connection for CLASS I application

**CON1 INPUT CONNECTOR**

PIN	AC Input	DC Input
1	Neutral	DC-
3	Line	DC+

**CON2 OUTPUT CONNECTOR**

PIN	AC Input
1, 2, 3	-Vout
4, 5, 6	+Vout

**CON3 - REMOTE ON/OFF CONNECTOR**

PIN	
1	-Ctrl
2	+Ctrl

Mates with  
Molex housing : **22-01-1022**  
Molex crimp terminals : **2759**  
\* Remote ON/OFF control (CON3) function is available as option "-L" suffix.

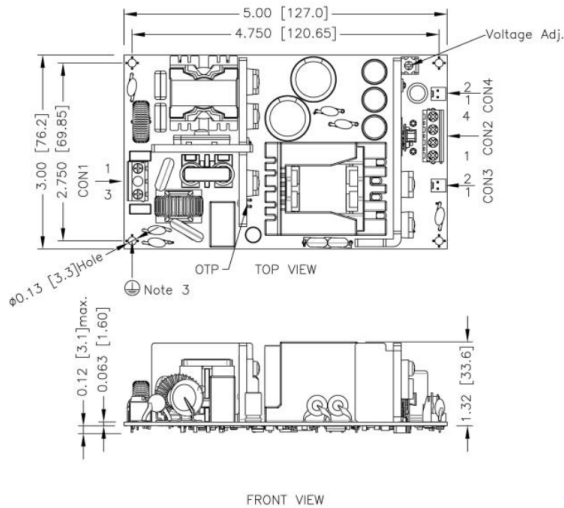
**CON4 - FAN CONTROL CONNECTOR**

PIN	
1	-Fan
2	+Fan

Mates with  
Molex housing : **22-01-1022**  
Molex crimp terminals : **2759**  
\* Fan power supply control (CON4) function is available as option "-F3" suffix.

## Mechanical Drawing

### Open Type: option "- T" Suffix



1. All dimensions in inches (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)  
x.xxx±0.01 (x.xx±0.25)
3. The screw locked torque MAX 3.4Kgf-cm/0.33N-m
4. The screws holes can be considered as PE connection for CLASS I application.

#### CON1 INPUT CONNECTOR

PIN	AC Input	DC Input
1	Neutral	DC-
3	Line	DC+

#### CON2 OUTPUT CONNECTOR

PIN	AC Input
1,2	-Vout
3,4	+Vout

#### CON3 - REMOTE ON/OFF CONNECTOR

PIN	
1	-Ctrl
2	+Ctrl

Mates with  
Molex housing : **22-01-1022**  
Molex crimp terminals : **2759**  
\* Remote ON/OFF control  
(CON3) function is available as  
option "-L" suffix.

#### CON4 - FAN CONTROL CONNECTOR

PIN	
1	-Fan
2	+Fan

Mates with  
Molex housing : **22-01-1022**  
Molex crimp terminals : **2759**  
\* Fan power supply control  
(CON4) function is available as  
option "-F3" suffix.

## Connector Options

### Molex Type, Suffix M



Mates with:	Crimp Terminals:
CON1: 09-93-0300	CON1: 2478
CON2: 09-93-0600	CON2: 2478

### Barrier Terminal Block



Mates with:
CON2: KST ring terminal RVS2-4
Screw locked torque: MAX 16.8Kgf.cm/1.65N.m

### Terminal Block, Suffix T



Mates with:	Wire dimension range
Screw locked torque MAX 2.5Kgf.cm/0.25N.m	24 ~ 14AWG

#### Note:

For further information, please contact Polytron Devices.