

AC-DC SWITCHING POWER SUPPLY

UNIVERSAL INPUT, UP TO 600 WATTS

INDUSTRIAL APPLICATIONS

UIA600 SERIES



FEATURES

- Universal Input: 90-264 VAC or 120-370 VDC
- With P.F.C. Function, PF>0.95
- Remote ON/OFF Function
- Current Share Function
- Power Good Function
- High Efficiency up to 90~93%
- High Power Density
- Over Load Protection
- Over Voltage Protection
- Over Temperature
- Short Circuit Protection
- Safety meets UL60950-1, EN60950-1 and IEC60950-1
- CE Mark
- Compliant to RoHS and REACH

SELECTION GUIDE

All specifications are typical at 230Vac input, full load and 25°C, unless otherwise noted.

Voltage (V.D.C.)	Current (Convection) (A) max	Max. Capacitor Load μ F	Max. Output Power W	Efficiency %	Model Number*
12	45	60,000	540	90%	UIA600-12S
24	25	50,000	600	92%	UIA600-24S
48	12.5	20,000	600	92%	UIA600-48S
54	11.1	10,000	600	93%	UIA600-54S

Input Specifications

Voltage range	90-264 VAC or 120-370 VDC
Input frequency, Hz	47-63 Hz
Current (Full Load)	< 8.0 A max. (115 VAC) / < 3.5 A max. (230 VAC)
Inrush Current (<2ms)	< 15 A max. (115 VAC) / < 30 A max. (230 VAC)
Leakage current, μ A	< 3.5 mA max.(240VAC 63Hz)
Remote ON/OFF	+RC / -RC: Power ON=open ; Power OFF=short
Power Factor	PF>0.99 (115 VAC) / PF>0.95 (230 VAC) at Full Load

Output Specifications

Trim	\pm 5%
Voltage Accuracy	\pm 2%
Line Regulation (LL-HL) (typ.)	\pm 1%
Load Regulation (5-100%) (typ.)	\pm 1%
Minimum Load	1%
Ripple & Noise (max.)	< 1% Vout
Hold-up Time	12 ms min.

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General Specifications	
Input-Output (V.AC)	3000VAC or 4242VDC
Input-FG (V.AC)	1500V
Output-FG (V.A.C)	500V
5V Stand by (18CFM FAN)	5VSB: 5V@0.6A ; Tolerance 10% , Ripple & Noise: 100m Vp-p (max.)
DC OK Signal (Power Good)	Turn ON: 3.7~5.7V ; Turn OFF: 0~1V
Current Share	CN4:CS, +V, -V are connected mutually in parallel.

Environmental Specifications	
Operating ambient temperature, °C	-25°C...+70°C (with derating)
Storage temperature range, °C	-25°C...+85°C
Temperature Coefficient	-25°C...+85°C
Humidity	95% RH
Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.

Physical Specifications		EMC Specifications		
Design meets safety standard	CE, UL60950-1	Specifications	Conditions	Level
Weight, lbs (g)	2.26 ± 0.11 lbs (g)	EMI	Conducted	EN 55032 Class B
Dimensions, inches (mm)	9.0 x 4.13 x 1.72 Inches (228.5 x 105.0 x 44.0 mm) Tolerance 0.5 mm		Radiated	Radiated Class A
Cooling	Integral fan	EMS	EN 55024	
MTBF	>100,000 h @ 25°C (MIL-HDBK-217F)	Surge	1KV L-N, 2KV L N-FG	

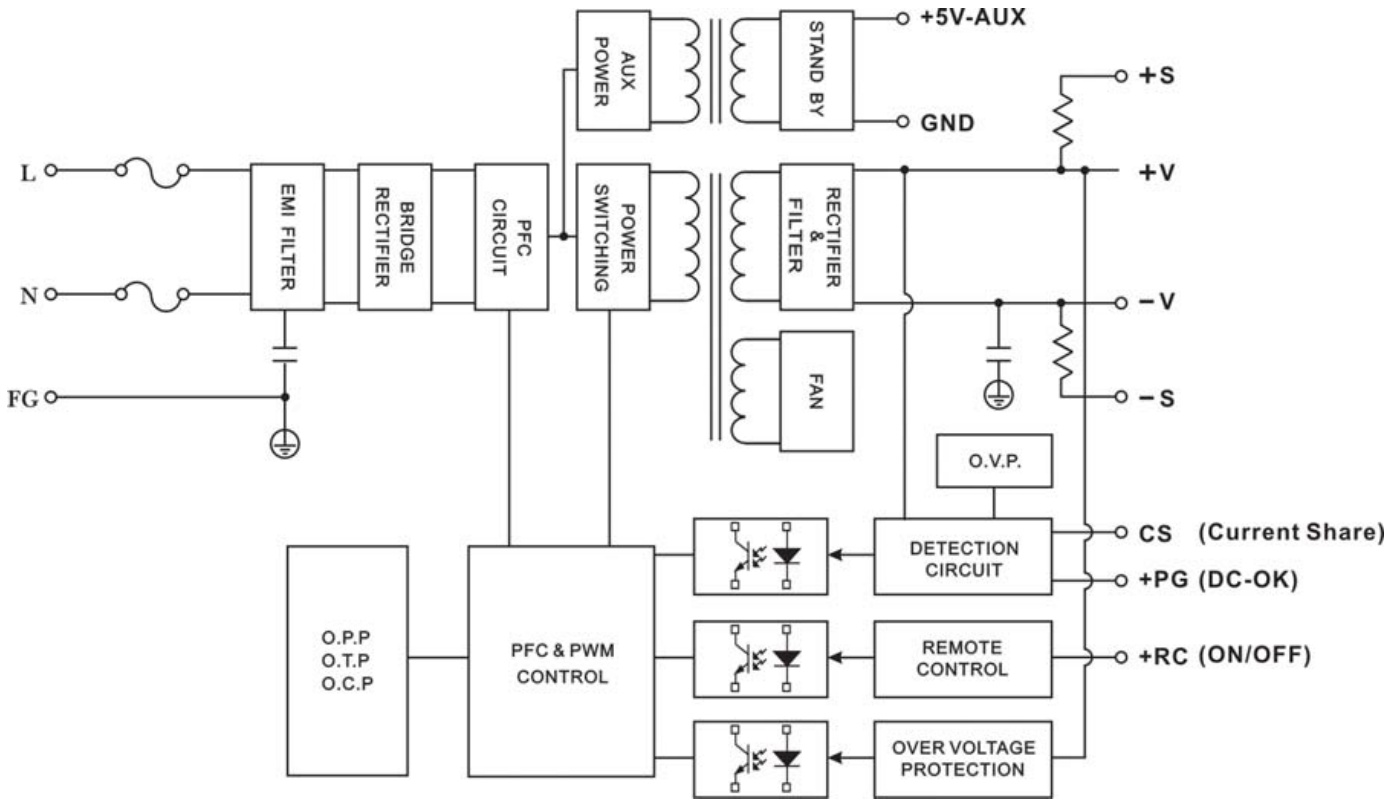
Note:

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors within Arch power supply.
3. External components may be required for Class I application. For further information, please contact Polytron Devices, Inc.

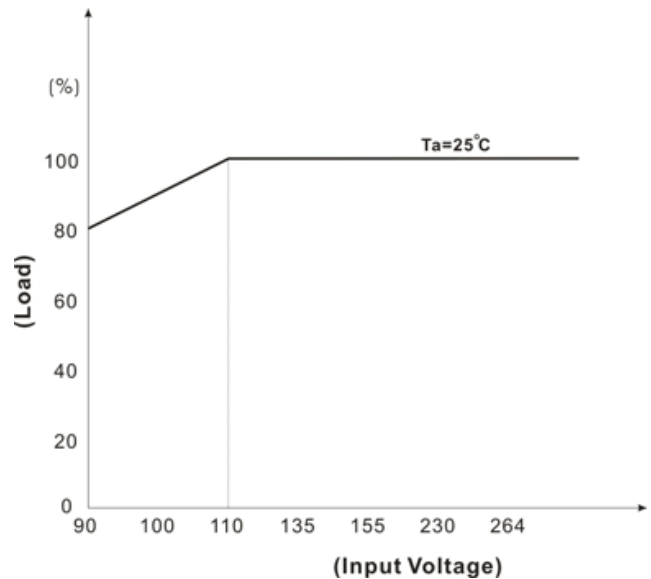
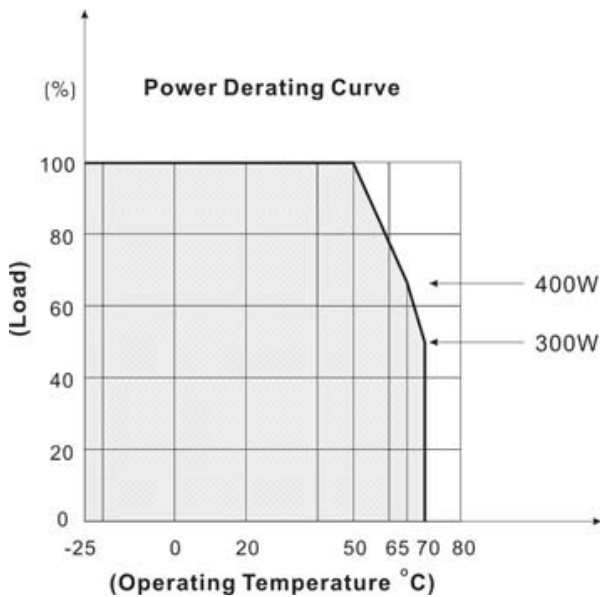
CAUTION: This power module is not internally fused. An input line fuse must always be used.

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Block Diagram

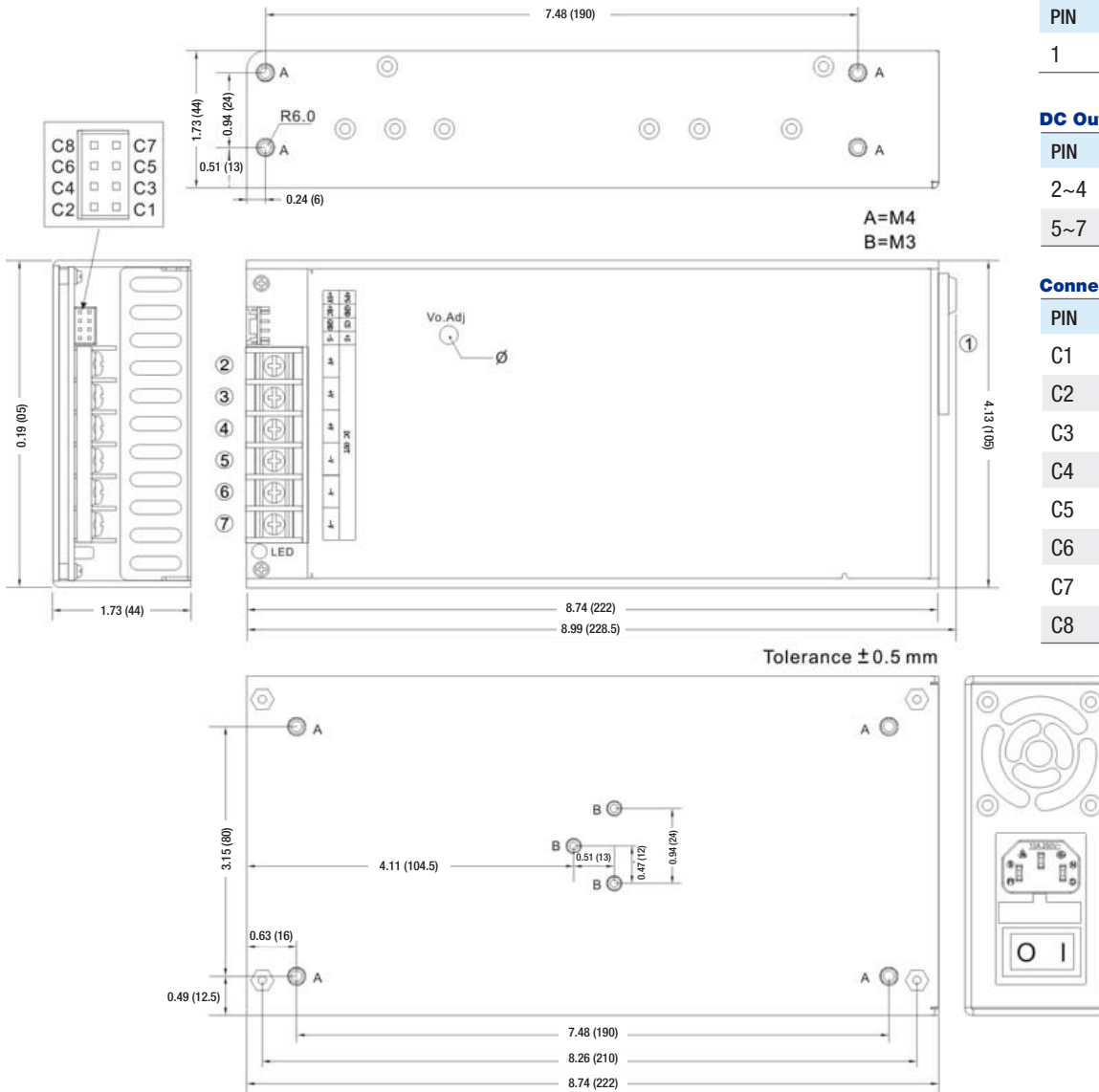


Derating Curve



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Mechanical Drawing



ASSEMBLY INSTRUCTIONS

*U Case T=2.0mm

Customer is advised to screw into the threads no more than 2.0mm

1. All dimensions in inch (mm)

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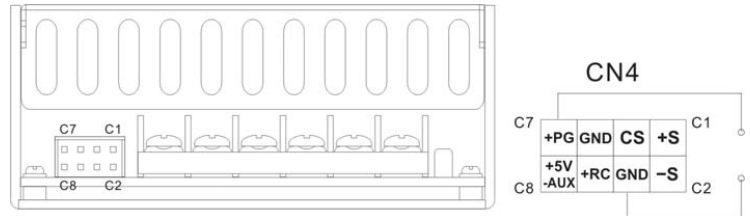
Function Description of CN4

Pin No.	Function	Description
C1	+S	
C2	-S	Current Share Function Pin
C3	CS	
C4	GND	This pin connects to the negative terminal(-V). Return for DC-OK signal output.
C5	GND	This pin connects to the negative terminal(-V). Return for DC-OK signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C4 (-RC), Short: Power OFF, Open: Power ON.
C7	+PG	DC-OK Signal is a DC output, referenced to pinC6(DC-OK GND).
C8	+5V-AUX	Stand by voltage output ground 4.5~5.5V, referenced to pin C4 or C5(GND). The maximum load current is 0.6A.

Function Manual & Application Note

1. DC-OK Signal

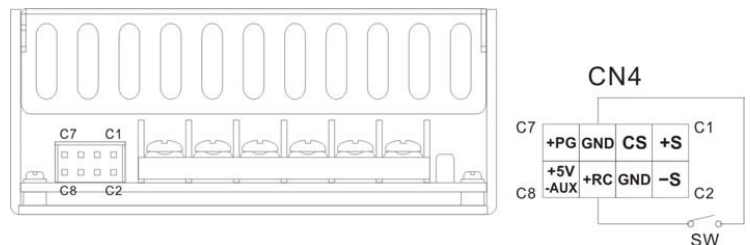
Between DC-OK(pinC5) and GND(pinC6)	Output Status
3.7~5.7V	ON
0~1V	OFF



2. Remote Control

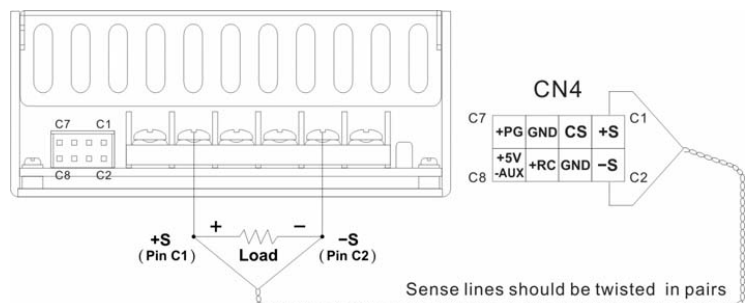
It can be turned ON/OFF by using the "Remote Control" function.

Between RC+(pinC3) and RC-(pinC4)	Output Status
SW ON (Short)	ON
SW OFF (Open)	OFF



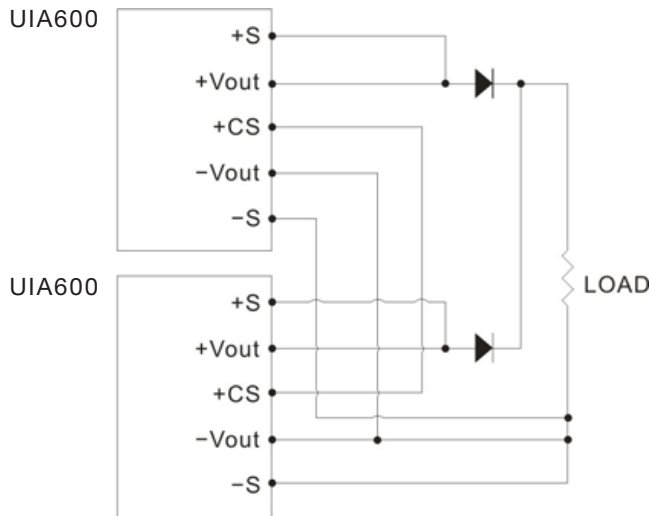
3. Current Share

1. Difference in V_{out} among paralleled units should be less than $\pm 1\%$
2. Output Power at Parallel Operation = Rated Power per Unit x Number of Unit x 80%
3. Connect in parallel no more than 2 units. Please contact Arch for advice if more than 2 is needed.
4. Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown below
5. The remote sensing compensates voltage drop on the load wiring up to 5V



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4. 1+1 Redundancy: using 1 more UIA600 as the redundant unit



5. 1+N Redundancy: Using more UIA600 as the redundant units to increase the reliability

