ARCH ELECTRONICS CORP.

AC-DC Power Module

AHC08 SERIES 8 Watts

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-305VAC, 47-440 Hz
- Single and Dual Output
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- Maximum No-Load Watts < 0.3W
- Small Size as AHC 5Watt with 8Watt Higher Power
- CE, UL Approval
- 3-Year Product Warranty

E199779 LEVEL3

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No. (Single Output)		AHC08 -3.3S	AHC08 -3.8S	AHC08 -5S	AHC08 -8S	AHC08 -9S	AHC08 -12S	AHC08 -14S	AHC08 -15S	AHC08 -24S
Max Output Wattage (W)		6.6W	8W	8W	8W	8W	8W	8W	8W	8W
Input	Voltage	90-305 VAC or 120-430 VDC								
	Frequency (Hz)	47-440 Hz								
	Current (Full load)	180 mA max. (115 VAC) / 110 mA max. (230 VAC)								
	Inrush Current (<500us)	25 A max. (115 VAC) / 45 A max. (230 VAC)								
	Leakage Current	0.25 mA max.								
	External Fuse (recommend)	2 A slow blow type								
Output	Voltage (V.DC.)	3.3V	3.8V	5V	8V	9V	12V	14V	15V	24V
	Voltage Accuracy	±2%								
	Current (mA) max	2000	2100	1600	1000	888	666	571	533	335
	Line Regulation (LL-HL) (typ.)	±0.2%								
	Load Regulation (balanced)	±1%.					±0.5%.			
	Minimum Load	0%								
	Maximum Capacitive Load (at 230VAC)	26000uF	25000uF	6000uF	2500uF	2300uF	1050uF	500uF	440uF	180uF
	Ripple	3.3S~15S : <100mV max (Vp-p) 24S : <150mV max (Vp-p)								
	Noise	3.3S~15S : <150mV max (Vp-p) 24S : <200mV max (Vp-p)								
	Efficiency	69%	71%	72%	79%	79%	79%	80%	80%	81%
	Hold-up Time	10 ms min.								
Protection	Over Power Protection	Hiccup technique, auto-recovery								
	Over Voltage Protection	Zener diode clamp								
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)								
Isolation	Input-Output (V.AC)	3000V								
Environment	Operating Temperature	-40°C…+70°C (with derating)								
	Storage Temperature	-40°C…+85°C								
	Temperature Coefficient	±0.02%/°C								
	Humidity	95% RH								
	MTBF	>450,000 h @ 25°C (MIL-HDBK-217F)								
Physical	Dimension (L x W x H)	2.055 x 1.055 x 0.75 Inches (52.2 x 26.8 x 19.0 mm) Tolerance ±0.5 mm								
	Case Material	Plastic resin (flammability to UL 94V-0)								
	Weight	35 g								
	Cooling Method	Free air convection								
Safety	Agency Approvals	CE, UL, cUL								
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B								
	EMS (Noise Immunity)	EN 55024								

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

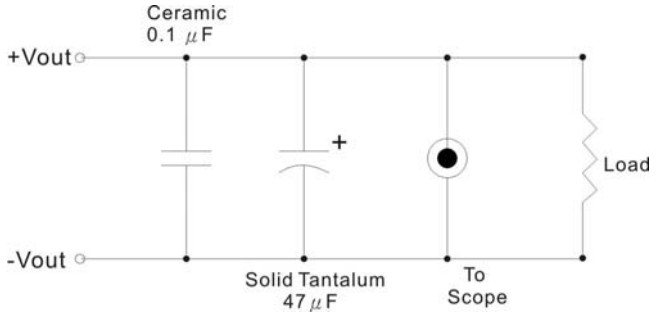
Model No. (Dual Output)		AHC08-5S3.3S	AHC08-8S5S	AHC08-12S5S	AHC08-12S7.5S
Max Output Wattage (W)		9W	8.75W	9W	8.6W
Input	Voltage	90-305 VAC or 120-430 VDC			
	Frequency (Hz)	47-440 Hz			
	Current (Full load)	200 mA max. (115 VAC) / 125 mA max. (230 VAC)			
	Inrush Current (<500us)	25 A max. (115 VAC) / 45 A max. (230 VAC)			
	Leakage Current	0.25 mA max.			
	External Fuse (recommend)	2 A slow blow type			
Output	Voltage (V.DC.)	Vo : 5V Vr : 3.3V	Vo : 8V Vr : 5V	Vo : 12V Vr : 5V	Vo : 12V Vr :7.5V
	Voltage Accuracy	Vo : ±2% Vr : ±15%	Vo : ±2% Vr : ±5%		
	Current (mA) max	1600 / 310	1000 / 150	666 / 200	560 / 250
	Line Regulation (LL-HL) (typ.)	Vo : ±0.2% Vr : ±3%			
	Load Regulation (balanced)	Vo : ±0.5% Vr : ±5%			
	Minimum Load	25%			
	Maximum Capacitive Load (at 230VAC)	Vo : 1200uF Vr : 1000uF	Vo : 800uF Vr :3800uF	Vo : 260 uF Vr : 3800uF	Vo : 260 uF Vr : 4000uF
	Ripple	<100mV max (Vp-p)			
	Noise	<150mV max (Vp-p)			
	Efficiency	71%	77%	78%	78%
	Hold-up Time	10 ms min.			
Protection	Over Power Protection	Hiccup technique, auto-recovery			
	Over Voltage Protection	Zener diode clamp			
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)			
Isolation	Input-Output (V.AC)	3000V			
Environment	Operating Temperature	-40°C…+70°C (with derating)			
	Storage Temperature	-40°C…+85°C			
	Temperature Coefficient	±0.02%/°C			
	Humidity	95% RH			
	MTBF	>450,000 h @ 25°C (MIL-HDBK-217F)			
Physical	Dimension (L x W x H)	2.055 x 1.055 x 0.75 Inches (52.2 x 26.8 x 19.0 mm) Tolerance ±0.5 mm			
	Case Material	Plastic resin (flammability to UL 94V-0)			
	Weight	35 g			
	Cooling Method	Free air convection			
Safety	Agency Approvals	CE, UL, cUL			
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B			
	EMS (Noise Immunity)	EN 55024			

NOTE

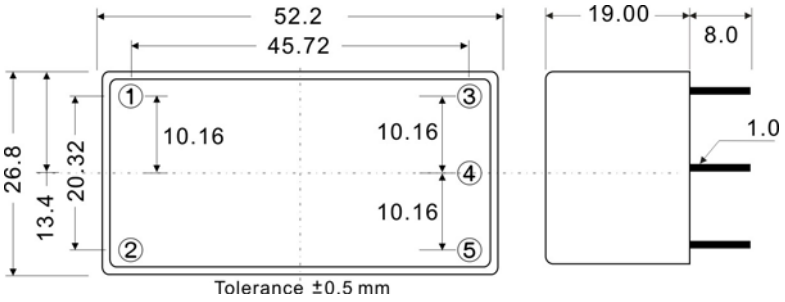
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Cross Regulation for dual output:
   (1) If Io=100%~80% & Ir=100%~80% then Corss Regulation≦±10%
   (2) If Io=100%~25% & Ir=100%~25% then Corss Regulation≦±18%
3. It's necessary Varistor 14S561K at L / N input side in parallel.
4. It's necessary 10R / 15φ thermistor at L input side in series connection.
5. Please refer to our PDF file "AC-DC Application" on our website: www.archcorp.com.tw

OUTPUT NOISE

The output noise is measured with 47μF tantalum capacitor and 0.1μF ceramic capacitor across output.



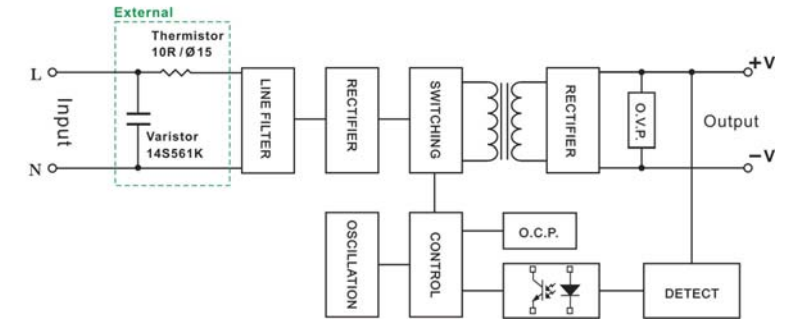
MECHANICAL DIMENSION (Top View)



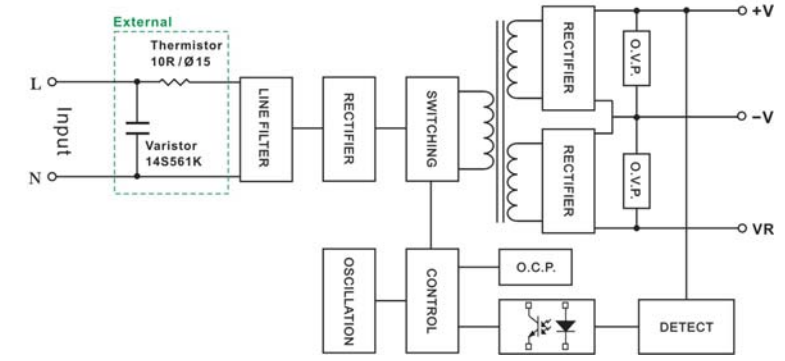
PIN#	Single	Dual
1	AC IN (N)	AC IN (N)
2	AC IN (L)	AC IN (L)
3	+DC OUT	+DC OUT
4	-DC OUT	-DC OUT
5	NO PIN	VR

BLOCK DIAGRAM

Single Output



Dual Output



DERATING