ARCH ELECTRONICS CORP.

AC-DC Power Module

ALC 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
- Low Ripple and Noise
- Isolation Class II
- Maximum No-Load Watts < 0.3W
- 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)		ALC-3.3S	ALC-5S	ALC-8S	ALC-9S	ALC-12S	ALC-14S	ALC-15S	ALC-24S
Max Output Wattage (W)		6.6W	8W	8W	8W	8W	8W	8W	8W
Input	Voltage	90-305 VAC or 120-430 VDC							
	Frequency (Hz)	47-440 Hz							
	Current (Full load)	190 mA max. (115 VAC) / 120 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	5V	8V	9V	12V	14V	15V	24V
	Voltage Accuracy	±2%							
	Current (mA) max	2000	1600	1000	888	666	571	533	335
	Line Regulation (LL-HL) (typ.)	±0.2%							
	Load Regulation (0-100%) (typ.)	±3%.	±2%	±0.5%.					
	Minimum Load	0%							
	Maximum Capacitive Load (at 230VAC)	8000uF	8000uF	4000uF	4000uF	1300uF	820uF	820uF	270uF
	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%	75%	78%	79%	79%	80%	80%	81%
	Hold-up Time	10 ms min.							
	Switching Frequency	132±8 KHz							
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	>500,000 h @ 25°C (MIL-HDBK-217F)							
Physical	Dimension (L x W x H)	1.48 x 1.11 x 1.08 Inches (37.66 x 28.16 x 27.5 mm) Tolerance ±0.5 mm							
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)							
	Weight	45 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							

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ELECTRICAL SPECIFICATIONS

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

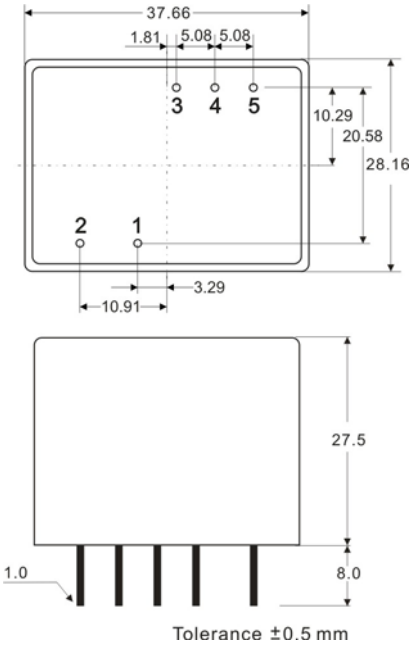
Model No. (Dual Output)		ALC-5S3.3S	ALC-8S5S	ALC-12S5S
Max Output Wattage (W)		9W	8.5W	8.5W
Input	Voltage	90-305 VAC or 120-430 VDC		
	Frequency (Hz)	47-440 Hz		
	Current (Full load)	200 mA max. (115 VAC) / 125 mA max. (230 VAC)		
	Inrush Current (<500us)	25 A max. (115 VAC) / 45 A max. (230 VAC)		
	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
	Voltage Accuracy	Vo : ±2% Vr : ±15%	Vo : ±2% Vr : ±10%	
	Current (mA) max	1600 / 310	1000 / 100	666 / 100
	Line Regulation (LL-HL) (typ.)	Vo : ±0.2% Vr : ±3%		
	Load Regulation (10-100%) (typ.)	Vo : ±0.5% Vr : ±5%		
	Minimum Load	25%		
	Maximum Capacitive Load (at 230VAC)	Vo : 4500uF Vr : 3800uF	Vo : 800uF Vr :3800uF	Vo : 260uF Vr : 3800uF
	Ripple	<100mV max (Vp-p)		
	Noise	<150mV max (Vp-p)		
	Efficiency	73%	78%	79%
	Hold-up Time	10 ms min.		
	Switching Frequency	132±8 KHz		
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	>500,000 h @ 25°C (MIL-HDBK-217F)		
Physical	Dimension (L x W x H)	1.48 x 1.11 x 1.08 Inches (37.66 x 28.16 x 27.5 mm) Tolerance ±0.5 mm		
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)		
	Weight	45 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. It's necessary Varistor 14S561K at L / N input side in parallel.
3. It's necessary 10R / 15φ thermistor at L input side in series connection.
4. Please refer to our PDF file "AC-DC Application" on our website: www.archcorp.com.tw

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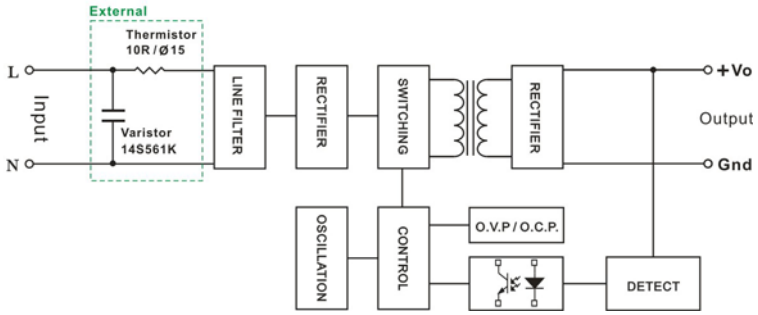
MECHANICAL DIMENSION (Top View)



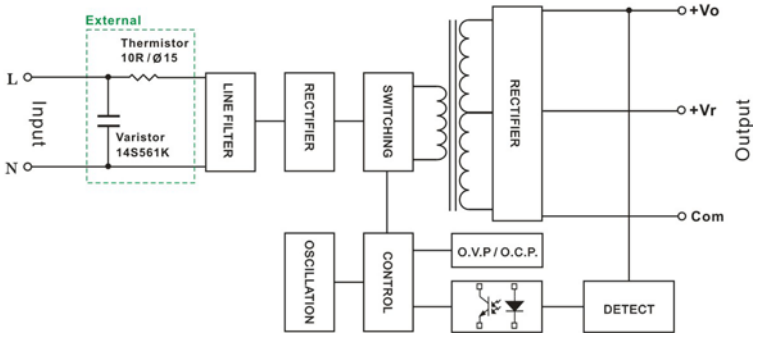
PIN#	Single	Dual
1	AC IN (N)	AC IN (N)
2	AC IN (L)	AC IN (L)
3	NC	+Vr
4	+VO	+VO
5	GND	GND

BLOCK DIAGRAM

Single Output



Dual Output



DERATING

