

AFC20 Series

20 W Switching Power Module for PCB Mounting

CoolPower
Solutions

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- Low Standby <0.5W
- Small Size as AFC 10Watt with 20Watt Higher Power
- Screw Terminal For Optional
- CE, CB and UL Approval
- 3-Years Product Warranty



ELECTRICAL SPECIFICATIONS

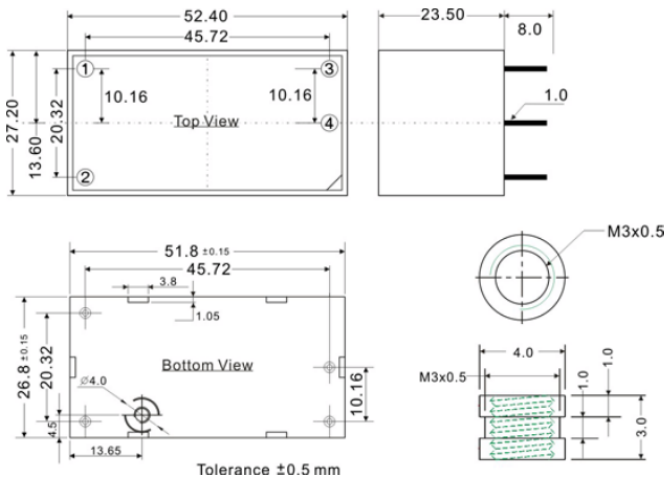
Model No.	AFC20-3.3S	AFC20-5S	AFC20-12S	AFC20-15S	AFC20-24S	
Max Output Wattage (W)	11.88W	18W	20W	20W	20W	
Input	Voltage					
	90-264 VAC or 120-370 VDC					
	Frequency (Hz)					
	47-440 Hz					
Input	Current (Full load)					
	385 mA max. (115 VAC) / 250 mA max. (230 VAC)					
	Inrush Current (<2ms,Cold Start)					
	20 A max. (115 VAC) / 40 A max. (230 VAC)					
Output	Output Voltage (V.DC.)	3.3V	5V	12V	15V	24V
	Output Voltage Accuracy	±2%				
	Output Current (mA) max	3600	3600	1660	1330	833
	Maximum Capacitive Load	4500uF	3500uF	1800uF	1500uF	1200uF
	Minimum Load	0%				
	Line Regulation (LL-HL) (typ.)	±0.5%				
	Load Regulation (5-100%) (typ.)	±1%				
	Ripple (Full load)	75mV max (Vp-p)			1% of Vout	
	Noise (Full load)	120mV max (Vp-p)			1% of Vout	
	Efficiency	74%	78%	82%	83%	83%
	Hold-up Time(typ)	12 ms (115VAC) / 56ms (230VAC)				
	Switching Frequency	100k~133k Hz				
	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	>250,000 h @ 25°C (MIL-HDBK-217F)				
Physical	Dimension (L x W x H)	2.06 x 1.07 x 0.93 Inches (52.4 x 27.2 x 23.5 mm) Tolerance ±0.5 mm				
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)				
	Weight	59g				
	Cooling Method	Free air convection				
Safety	Agency Approvals	CE, UL/cUL, CB				
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B				
	EMS (Noise Immunity)	EN 55024				

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
Note :1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.

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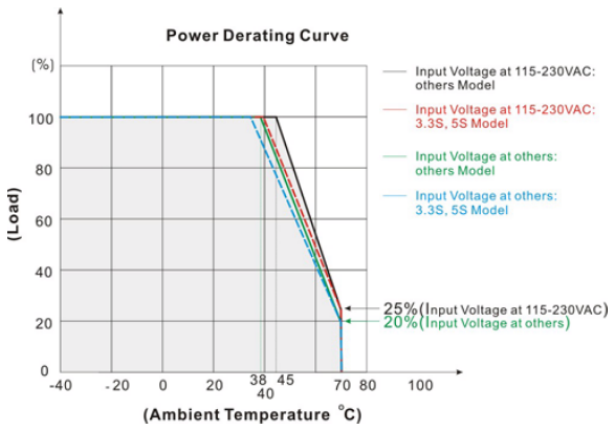
MECHANICAL DIMENSION



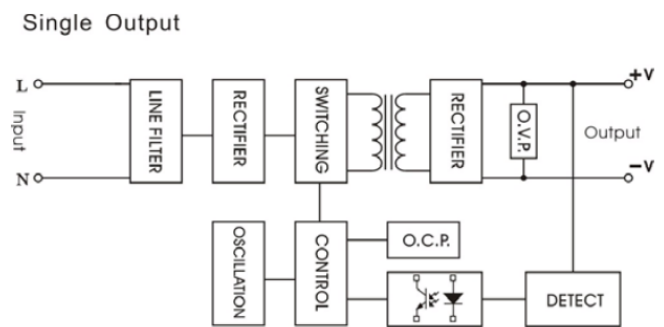
PIN#	SINGLE
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	-DC OUT

Maximum Torque 1 2 { 1.2 1 } (k g f . c m { N . m })

DERATING



BLOCK DIAGRAM

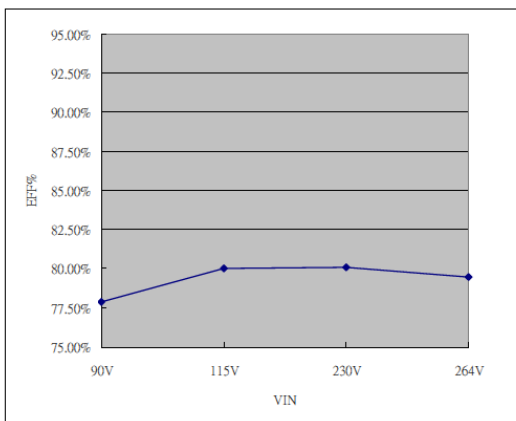


EFFICIENCY VERSUS LOAD

AFC20-5S (Full Load & Temperature: 25 °C)

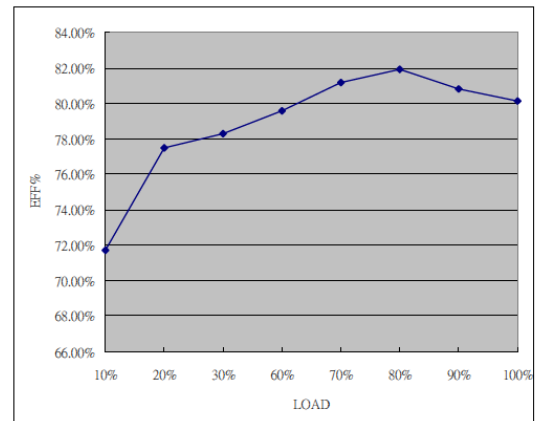
VIN VS Efficiency

Input Voltage (V)	90	115	230	264
Efficiency (%)	77.90	80.00	80.10	79.50



LOAD VS Efficiency

Load (%)	10	20	30	60	70	80	90	100
230V (%)	71.7	77.5	78.3	79.6	81.2	81.9	80.8	80.1



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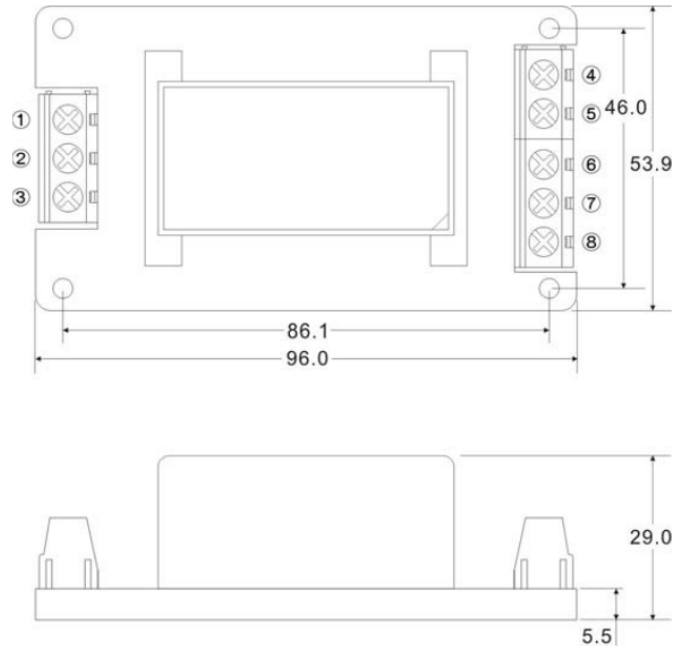
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SCREW TERMINAL

AFC20-A2



PIN#	Single
1	NO CONNECT
2	AC IN (L)
3	AC IN (N)
4	NO CONNECT
5	+DC OUT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT



AFC20-A5



PIN#	Single
1	NO CONNECT
2	AC IN (L)
3	AC IN (N)
4	NO CONNECT
5	+DC OUT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT

