ARCH ELECTRONICS CORP.

VER : A_2 update : 2010.12.24

AC-DC Switching Power Supply

AQF100O SERIES 100 Watts

KEY FEATURES

- Open Frame 100W Power Supply in 4.0” x 2.0” Size
- High Efficiency up to 93% Typical
- Active PFC Function, >0.95 (230Vac), >0.99 (115Vac)
- Universal Input: 90-264 VAC
- 100W Full Load at 50°C Under Free Air Convection
- 120W with FAN (20CFM / 300LFM)
- Low Leakage Current, <250uA
- EN55022 Class B Meets
- Class I and Class II Construction
- Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- 3-Years Product Warranty



E199779 LEVEL3

Standard	A Type
	
	

ELECTRICAL SPECIFICATIONS

Model No.		AQF100O-12S	AQF100O-15S	AQF100O-24S	AQF100O-48S
Max Output Wattage (Free air Convection) (W)		100 W			
Max Output Wattage (with 20CFM / 300LFM FAN) (W)		120W			
Input	Voltage	90-264 VAC or 120-370 VDC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	<2.0 A max. (115 VAC) / <1.0 A max. (230 VAC)			
	Inrush Current (<2ms)	< 30 A max. (115 VAC) / < 60 A max. (230 VAC)			
	Leakage Current	< 0.5 mA max.			
	Power Factor	PF>0.99 (115 VAC) / PF>0.95 (230 VAC) at Full Load			
Output	Voltage (V.DC.)	12V	15V	24V	48V
	Voltage Accuracy	±2%			
	Current (Free air Convection) (A) max	8.4	6.7	4.2	2.1
	Current (with 20CFM / 300LFM FAN) (A) max	10	8	5	2.5
	Line Regulation	±1%			
	Load Regulation	±1%			
	Minimum Load	0%			
	Maximum Capacitive Load	70,000µF	50,000µF	6,000µF	1,000µF
	Ripple & Noise max.	120mV	150mV	200mV	240mV
	Efficiency (typ.)	89%	89%	92%	93%
	Hold-up Time	10 ms (110 VAC) min.			
	Switching Frequency	100 kHz			
Protection	Over Power Protection	Auto recovery, Hiccup mode			
	Over Voltage Protection	Zener diode clamp			
	Short Circuit Protection	Auto recovery, Hiccup mode			
Isolation	Input-Output (V.AC)	3000V			
	Input-FG (V.AC)	1500V			
	Output-FG (V.AC)	500V			
Environment	Operating Temperature	-25°C…+70°C (with derating)			
	Storage Temperature	-25°C…+85°C			
	Temperature Coefficient	±0.03%/°C (0~50°C)			
	Humidity	95% RH			
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)			
	Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.			

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

2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

3.Hold-up Time measured at 90% Vout.

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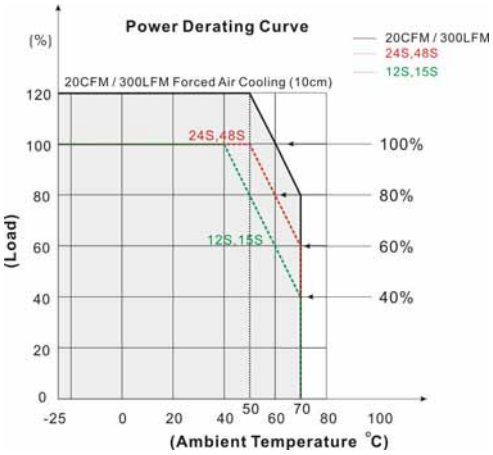
Model No.		AQF100O-12S	AQF100O-15S	AQF100O-24S	AQF100O-48S
Physical	Dimension (L x W x H)	4.1 x 2.05 x 0.98 Inches (103.9 x 52.1 x 25.0 mm) Tolerance ±0.5 mm			
	Weight	200 g			
	Cooling Method	Free convection			
Safety	Agency Approvals	CE, UL60950-1			
EMC	EMI (Conducted & Radiated Emission)	EN61000-6-3、EN 55022 class B (Conductive plane to be connected to safety earth)			
	EMS (Noise Immunity)	EN 55024、EN61000-4-2,3,4,5,6,8,11			

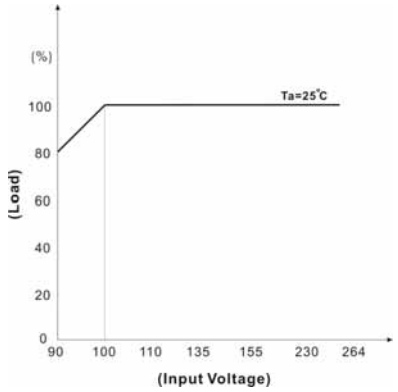
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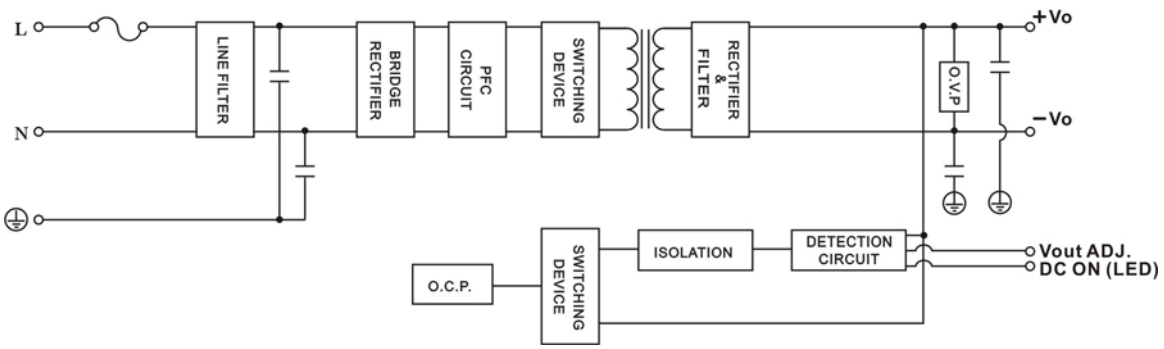
DERATING





BLOCK DIAGRAM

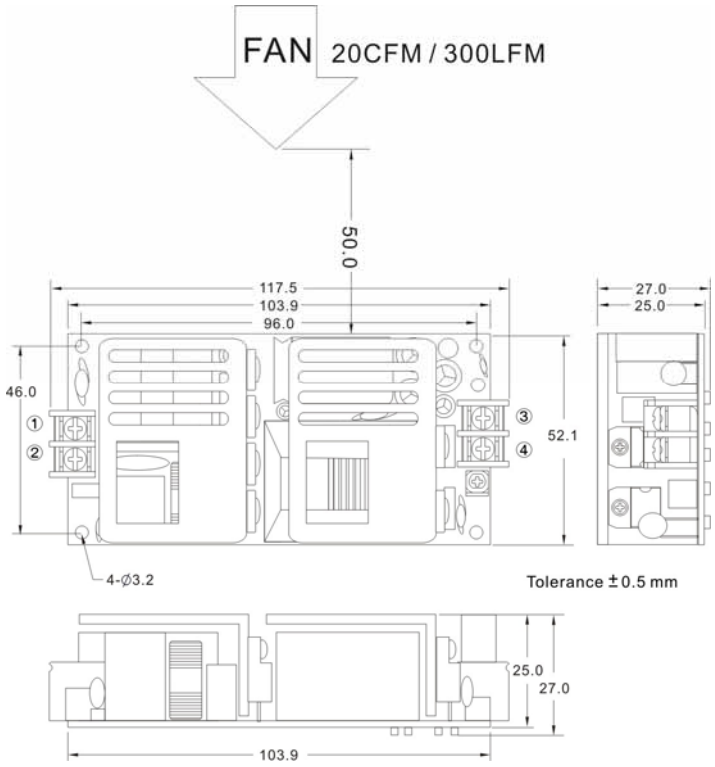
Single Output

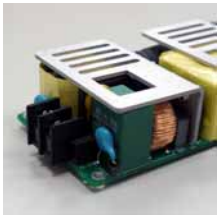


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MECHANICAL DIMENSION (Top View)

Standard : Terminal Block

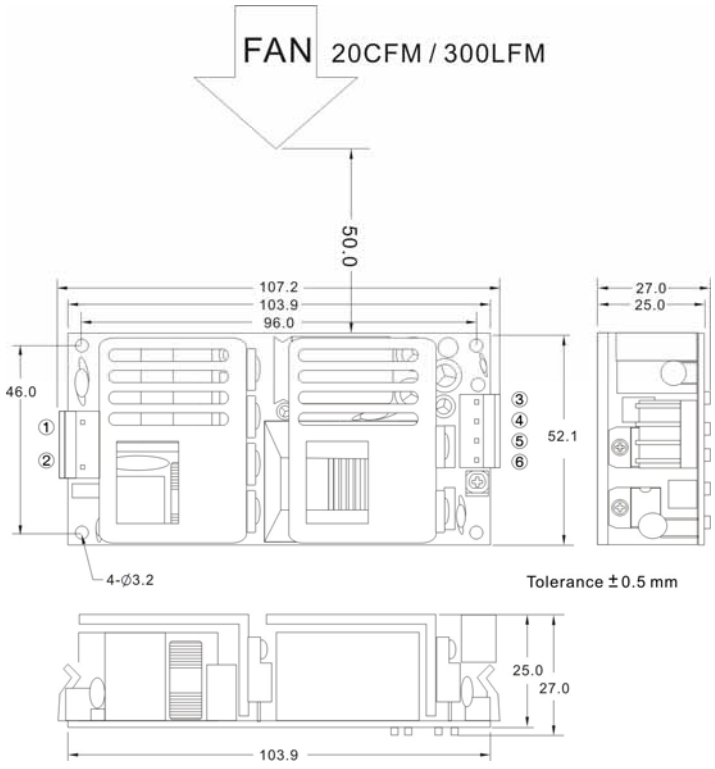


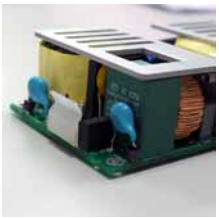




PIN#	SINGLE
1	AC IN (N)
2	AC IN (L)
3	+DC OUT
4	-DC OUT

A Type : Molex Series 8673 (Alex Connector Co., ltd)







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

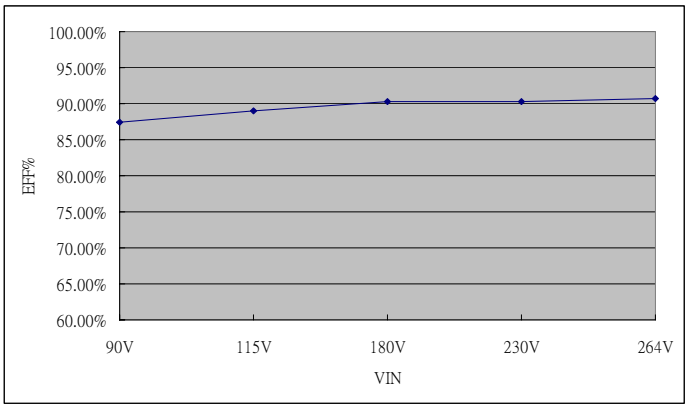
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EFFICIENCY VERSUS LOAD

AQF100O-12S

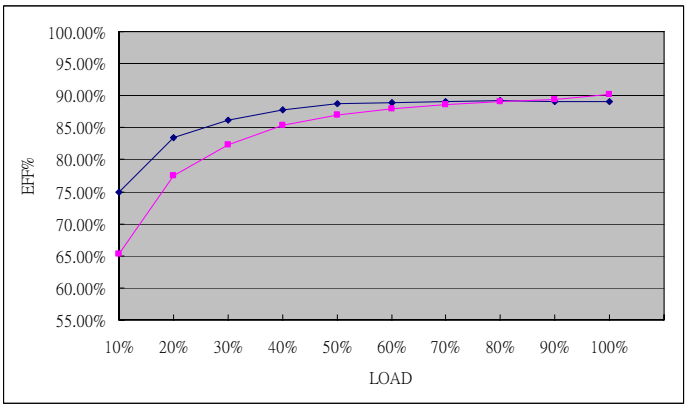
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.38	89.03	90.31	90.22	90.66



LOAD VS Efficiency

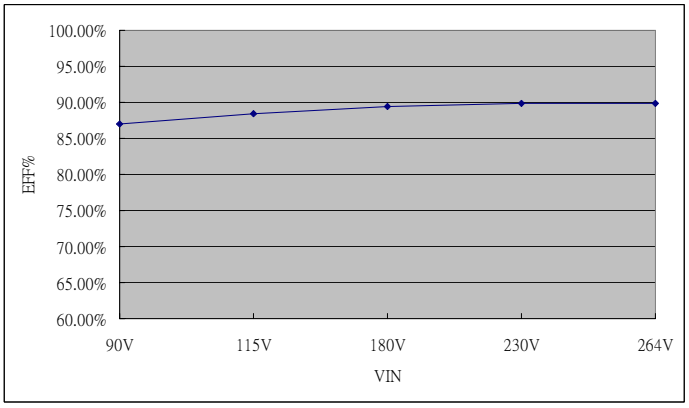
Load (%)	10	20	30	40	50
115V (%)	74.98	83.50	86.13	87.83	88.70
230V (%)	65.30	77.58	82.39	85.30	87.01
Load (%)	60	70	80	90	100
115V (%)	88.87	89.11	89.20	89.13	89.03
230V (%)	87.95	88.63	89.14	89.46	90.22



AQF100O-15S

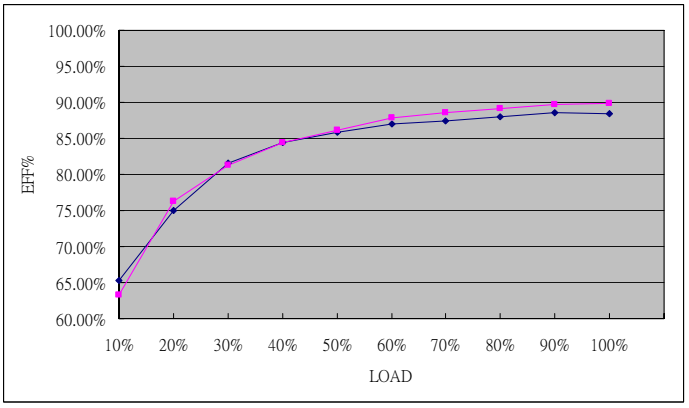
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.03	88.49	89.45	89.81	89.89



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	65.23	75.04	81.54	84.42	85.92
230V (%)	63.23	76.35	81.29	84.36	86.12
Load (%)	60	70	80	90	100
115V (%)	87.07	87.47	87.96	88.51	88.49
230V (%)	87.88%	88.51%	89.17%	89.77%	89.81%



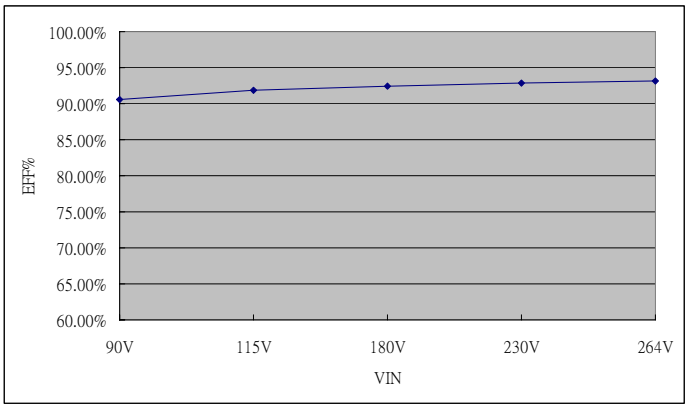
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EFFICIENCY VERSUS LOAD

AQF100O-24S

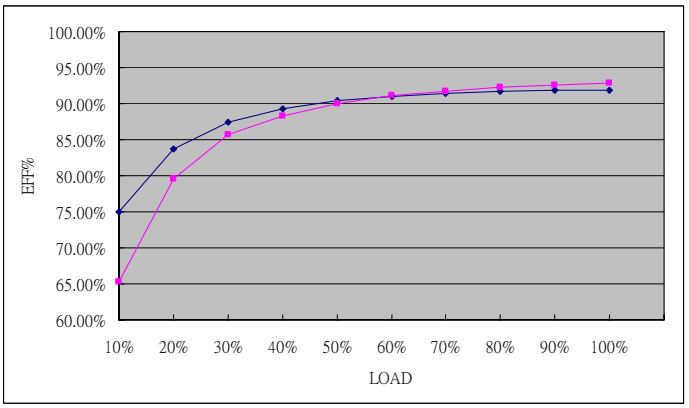
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	90.53	91.90	92.44	92.85	93.13



LOAD VS Efficiency

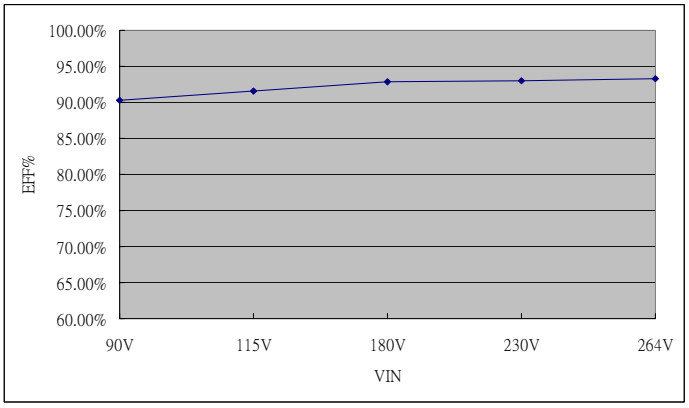
Load (%)	10	20	30	40	50
115V (%)	74.99	83.78	87.43	89.22	90.44
230V (%)	65.32	79.51	85.76	88.32	90.04
Load (%)	60	70	80	90	100
115V (%)	90.99	91.43	91.72	91.89	91.90
230V (%)	91.08	91.76	92.23	92.64	92.85



AQF100O-48S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	90.27	91.64	92.81	93.03	93.35



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	73.93	83.86	87.18	89.22	90.34
230V (%)	66.76	79.70	84.80	87.75	89.62
Load (%)	60	70	80	90	100
115V (%)	90.82	91.28	91.53	91.64	91.64
230V (%)	90.77	91.47	92.09	92.49	93.03

