

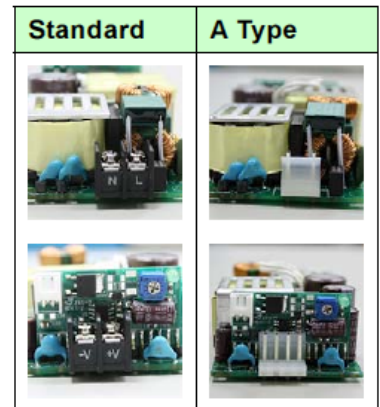
AQF160 Series

160 W AC/DC Open Frame Switching Power Supply

CoolPower
Solutions

KEY FEATURES

- Open Frame 100W Power Supply in 4.0" x 2.0" Size
- Active PFC Function, >0.95 (230Vac), >0.98 (115Vac)
- Universal Input: 90-264 VAC
- 100W Full Load at 40°C Under Free Air Convection
- 160W with 25CFM FAN
- <0.5W No Load Input Power
- 12V (Aux) / 0.3A
- EN55022 Class B Meets
- Isolation Class I
- Continuous Short Circuit Protection with Hiccup Mode and Auto Recover
- 3-Years Product Warranty



ELECTRICAL SPECIFICATIONS

Model No.	AQF160-12S	AQF160-15S	AQF160-24S	AQF160-48S
Max Output Wattage (Free air Convection) (W)	100 W			
Max Output Wattage (with 25CFM FAN) (W)	160 W			
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)			
Output	Inrush Current (<2ms)			
	< 35 A max. (115 VAC) / < 70 A max. (230 VAC)			
	Leakage Current			
	< 0.5 mA max.			
	Power Factor			
	PF>0.98 (115 VAC) / PF>0.95 (230 VAC) at Full Load			
Output	Voltage (V.DC.)			
	12V	15V	24V	48V
	Voltage Adj Range (V.DC.)			
	±5% Output Voltage			
	Voltage Accuracy			
	±2%			
	Current (Free air Convection) (A) max			
	8.4	6.7	4.2	2.1
	Current (with 25CFM FAN) (A) max			
	13.3	10.6	6.66	3.33
Line Regulation				
±1%				
Load Regulation				
±1%				
Maximum Capacitive Load				
3,000µF	2,000µF	360µF	180µF	
Ripple & Noise max.				
130mV	1% Vout			
Efficiency (typ.)				
90%	90%	90.5%	91.5%	
Hold-up Time (at 115 VAC)				
10 ms min.				
Protection	Over Power Protection			
	Auto recovery, Hiccup mode			
	Over Temperature Protection			
	Auto recovery			
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 normal 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.

4. Main Vout >50% Load, 12V (Aux) / 0.3A.

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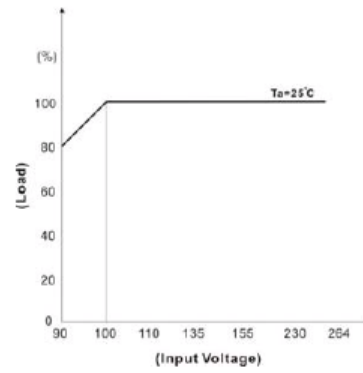
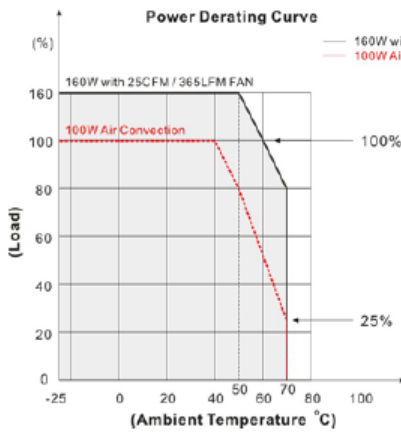
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Physical	Dimension (L x W x H) 4.1 x 2.05 x 1.42 Inches (103.9 x 52.1 x 29.0 mm) Tolerance ± 0.5 mm			
	Weight 220 g			
	Cooling Method Free convection			
Safety	Agency Approvals CE, UL60950-1 (Pending)			
EMC	EMI (Conducted & Radiated Emission) EN 55022 class B (Conductive plane to be connected to safety earth) (Pending)			
	EMS (Noise Immunity) EN 55024 (Pending)			

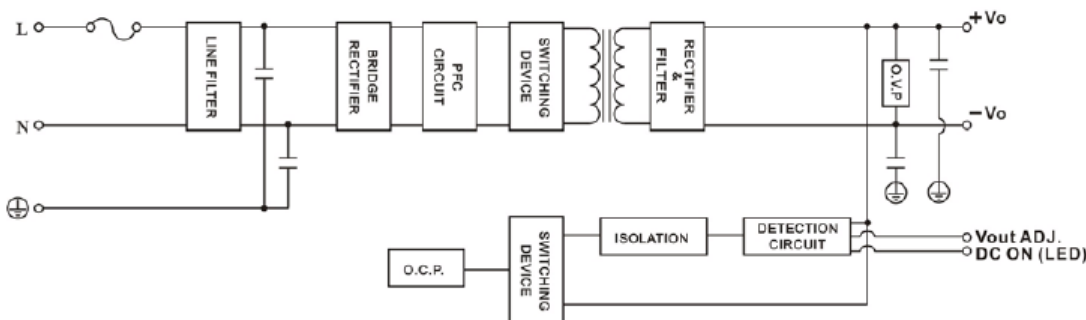
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DERATING



BLOCK DIAGRAM

Single Output



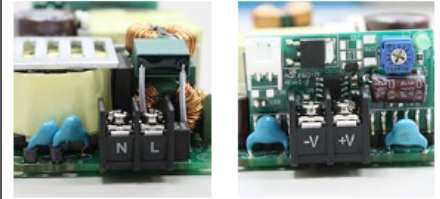
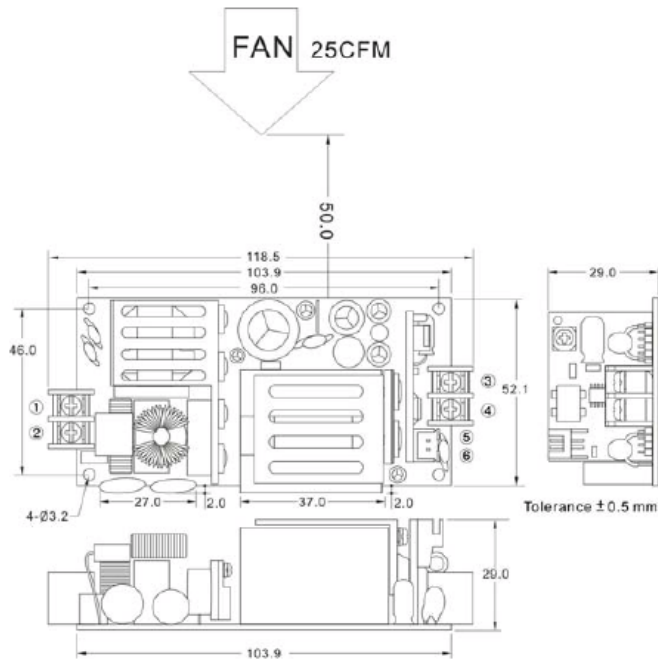
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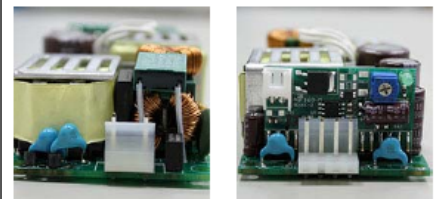
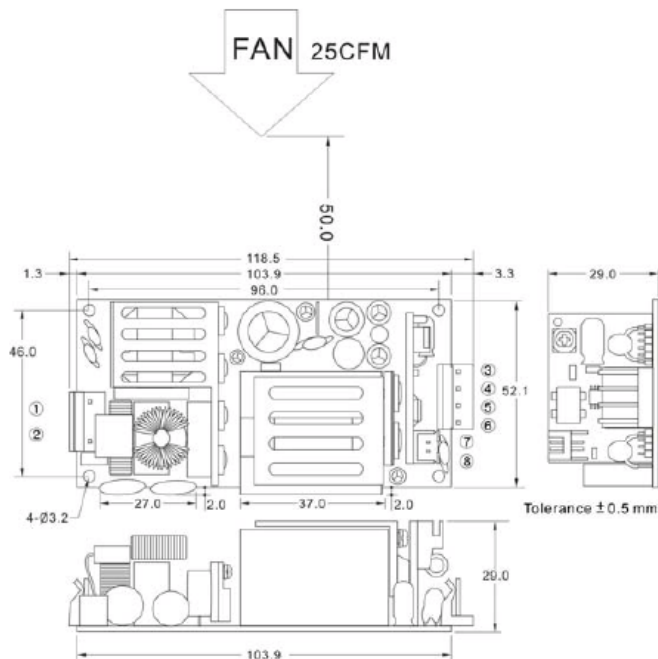
MECHANICAL DIMENSION (Top View)

Standard : Terminal Block



PIN#	Single
1	AC IN (N)
2	AC IN (L)
3	+DC OUT
4	-DC OUT
5	-AUX OUT
6	+AUX 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
7	-AUX OUT
8	+AUX OUT

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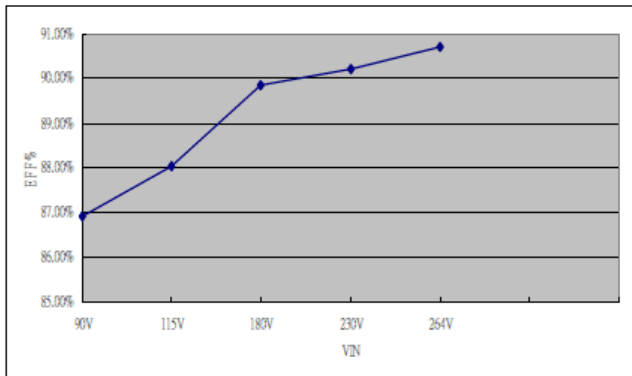
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EFFICIENCY VERSUS LOAD

AQF160-12S

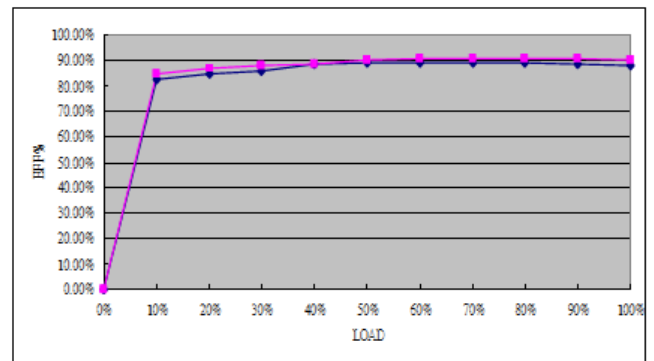
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.90	88.03	89.85	90.22	90.69



LOAD VS Efficiency

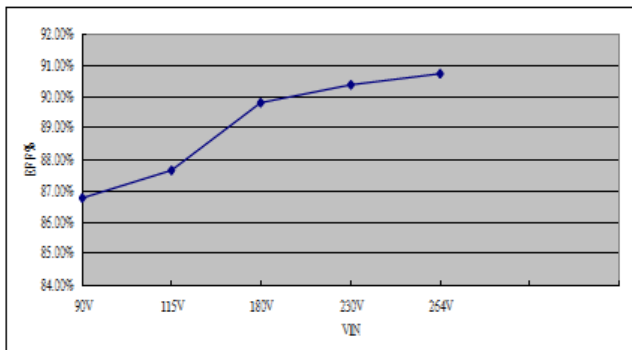
Load (%)	10	20	30	40	50
115V (%)	82.29	84.55	85.71	88.58	89.03
230V (%)	84.68	86.75	88.05	88.64	90.05
Load (%)	60	70	80	90	100
115V (%)	89.08	88.90	88.87	88.61	88.11
230V (%)	90.61	90.79	90.79	90.70	90.40



AQF160-15S

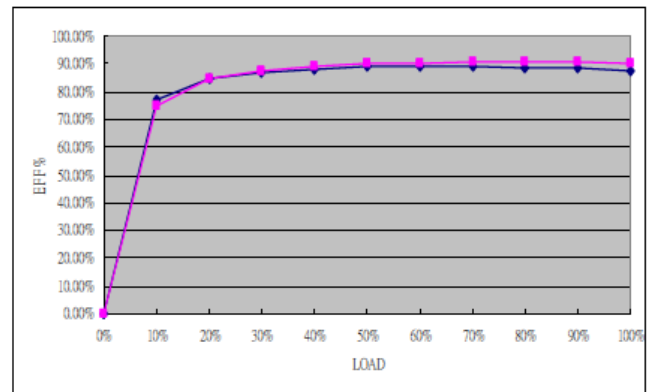
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.75	87.64	89.81	90.38	90.74



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	76.92	84.73	87.06	88.11	88.82
230V (%)	75.13	84.50	87.60	89.04	90.00
Load (%)	60	70	80	90	100
115V (%)	88.91	89.04	88.77	88.31	87.64
230V (%)	90.39	90.66	90.70	90.54	90.38



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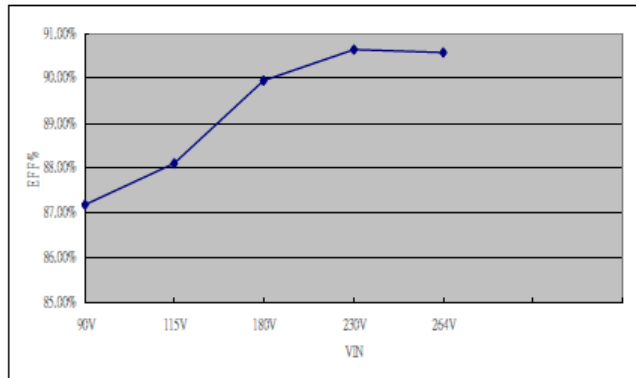
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EFFICIENCY VERSUS LOAD

AQF160-24S

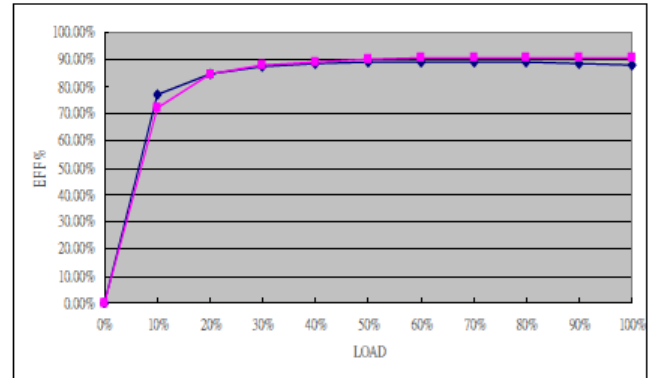
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.19	88.09	89.93	90.63	90.57



LOAD VS Efficiency

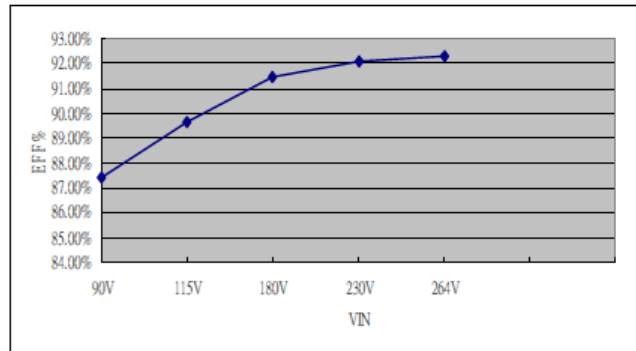
Load (%)	10	20	30	40	50
115V (%)	76.80	84.68	87.18	88.48	88.87
230V (%)	72.26	84.67	87.96	89.34	90.05
Load (%)	60	70	80	90	100
115V (%)	88.85	89.02	88.82	88.57	88.09
230V (%)	90.51	90.75	90.80	90.73	90.63



AQF160-48S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.44	89.65	91.47	92.10	92.33



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	79.42	85.97	88.41	89.42	90.04
230V (%)	78.22	84.82	88.72	90.30	91.29
Load (%)	60	70	80	90	100
115V (%)	90.29	90.33	90.15	90.04	89.65
230V (%)	91.77	92.08	92.22	92.16	92.10

