

# ARCH AQC125 AC-DC Power Datasheet

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## KEY FEATURES

Switching Power Module for PCB Mountable

Active PFC Function, >0.95 (230Vac), >0.98 (115Vac)

Universal Input: 90-264 VAC

Four M3 Mounting Holes Optional on Bottom Side

EN55022 Class B Meets

Continuous Short Circuit Protection with Hiccup Mode  
and Auto Recover

3-Years Product Warranty

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- EN55022 Class B Meets
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- 3-Years Product Warranty


**ELECTRICAL SPECIFICATIONS**

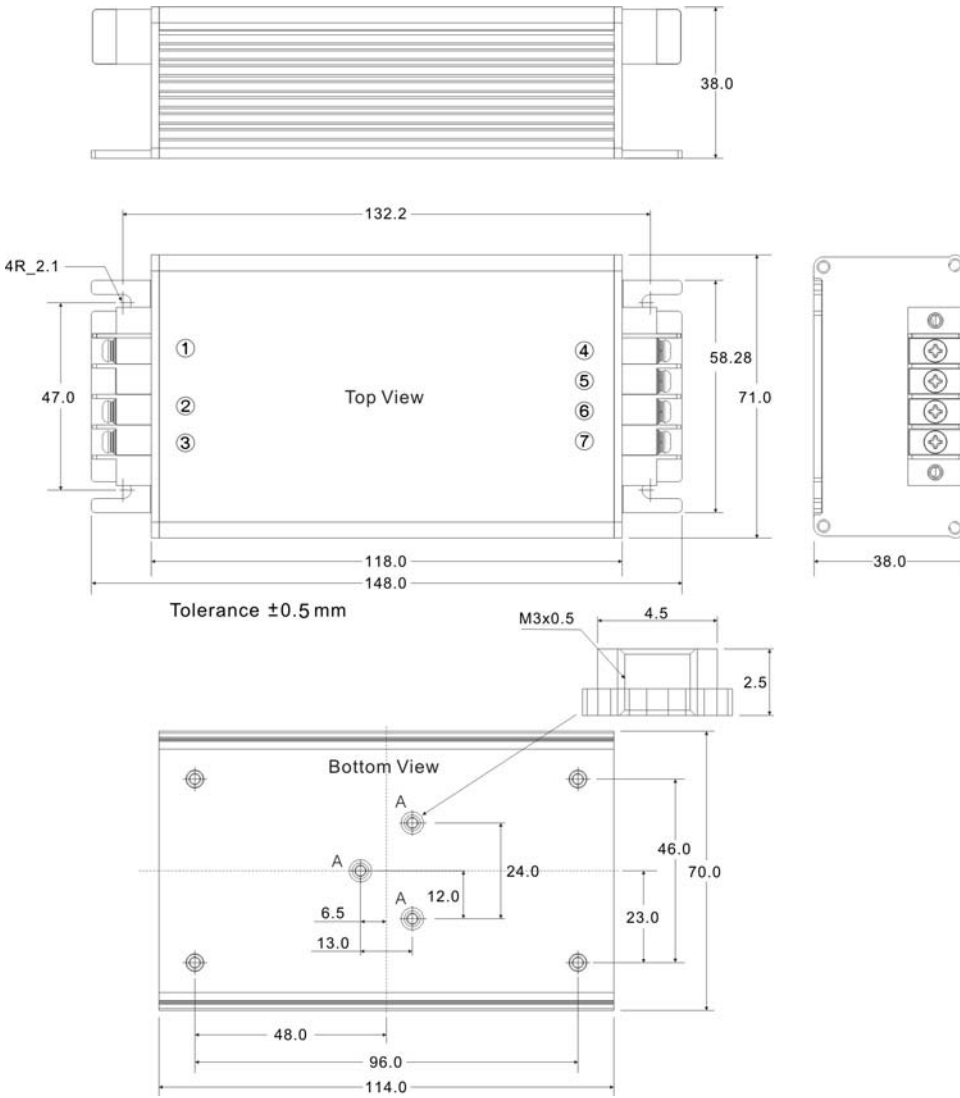
Model No.	AQC125-12S	AQC125-15S	AQC125-24S	AQC125-48S	
Max Output Wattage (W)	125 W				
Input	Voltage	90-264 VAC or 120-370 VDC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	<2.0 A max. (115 VAC) / <1.0 A max. (230 VAC)			
	Inrush Current (<2ms)	< 35 A max. (115 VAC) / < 70 A max. (230 VAC)			
	Leakage Current	< 0.75 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 Accuracy	±2%			
	Current (A) max	10.4	8.33	5.2	2.6
	Line Regulation (LL-HL) (typ.)	±1%			
	Load Regulation (5-100%) (typ.)	±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			
	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)			
Physical	Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.			
	Dimension (L x W x H)	5.75 x 2.8 x 1.5 Inches (146.0 x 71.0 x 38.0 mm) Tolerance ±0.5 mm			
	Weight	680 g			
Safety	Cooling Method	Free convection			
	Agency Approvals	CE, UL60950-1, CB (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)			
	Surge	1KV L-N, 2KV L N-FG (Pending)			

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.

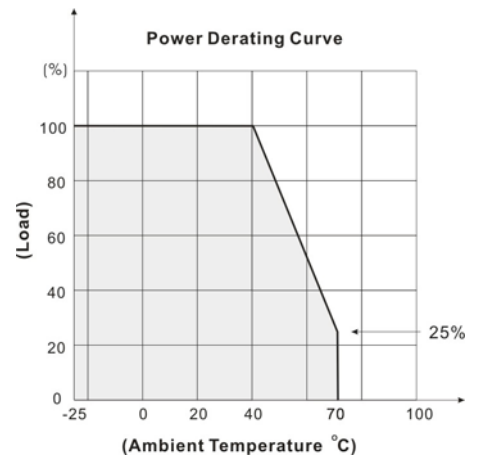
3.Hold-up Time measured at 90% Vout.

**MECHANICAL DIMENSION ( Top View )**



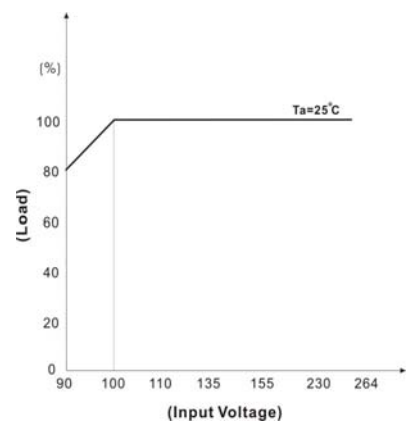
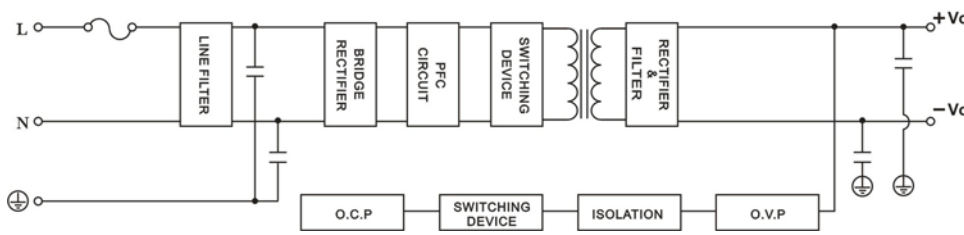
PIN#	SINGLE
1	FG
2	AC IN (N)
3	AC IN (L)
4	+DC OUT
5	+DC OUT
6	-DC OUT
7	-DC OUT

**DERATING**



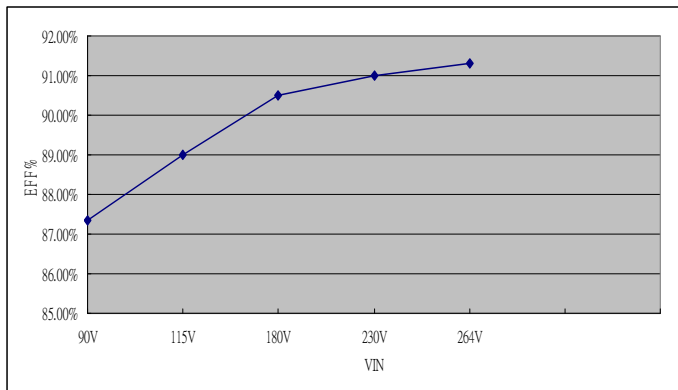
**BLOCK DIAGRAM**

Single Output

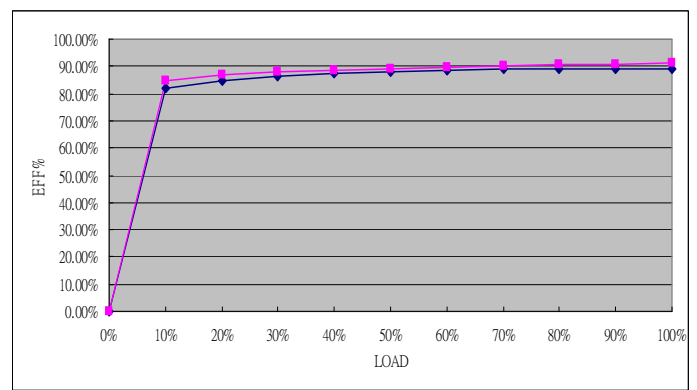


**EFFICIENCY VERSUS LOAD**
**AQC125-12S**
**VIN VS Efficiency**

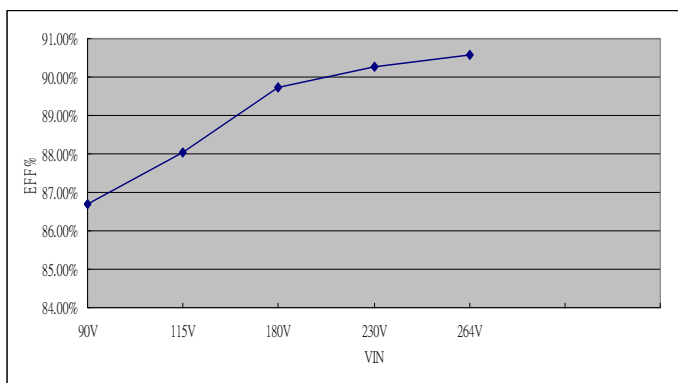
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.33	89.00	90.49	91.01	91.31


**LOAD VS Efficiency**

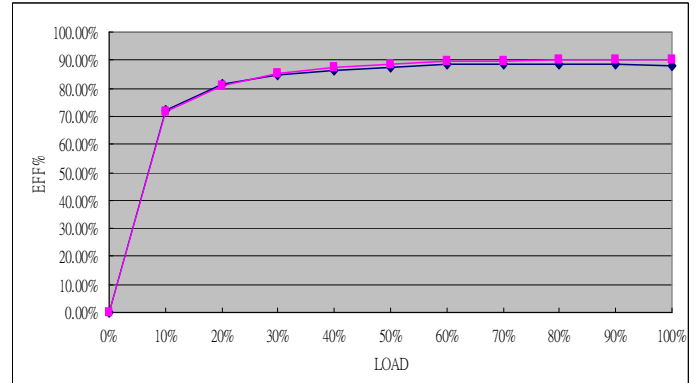
Load (%)	10	20	30	40	50
115V (%)	81.79%	84.70%	86.31%	87.39%	88.09%
230V (%)	84.57	87.08	87.74	88.66	89.10
Load (%)	60	70	80	90	100
115V (%)	88.65%	88.99%	89.09%	89.08%	89.00%
230V (%)	89.71	90.18	90.63	90.82	91.01


**AQC125-15S**
**VIN VS Efficiency**

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.68	88.04	89.72	90.27	90.58

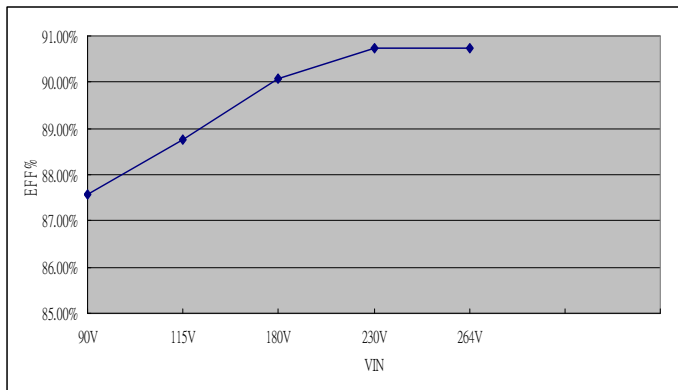

**LOAD VS Efficiency**

Load (%)	10	20	30	40	50
115V (%)	72.19	81.27	84.84	86.55	87.63
230V (%)	71.78	80.74	85.03	87.30	88.63
Load (%)	60	70	80	90	100
115V (%)	88.34	88.52	88.64	88.42	88.04
230V (%)	89.40	89.85	90.13	90.27	90.27

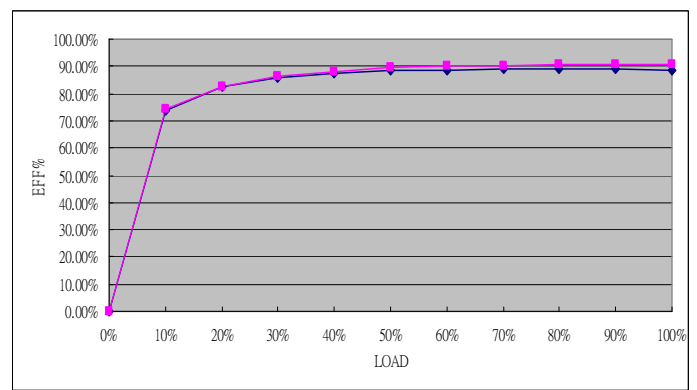


**EFFICIENCY VERSUS LOAD**
**AQC125-24S**
**VIN VS Efficiency**

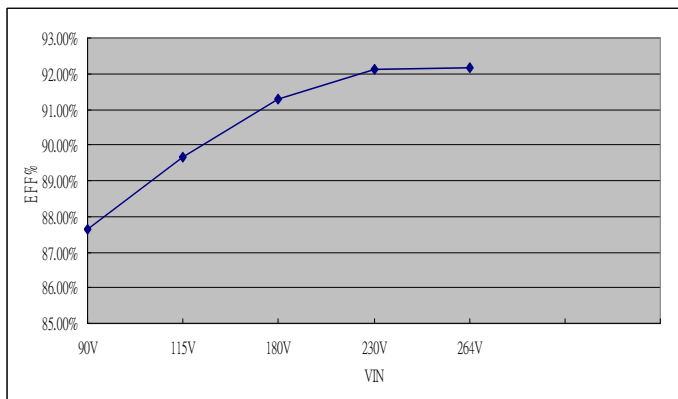
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.56	88.76	90.09	90.73	90.74


**LOAD VS Efficiency**

Load (%)	10	20	30	40	50
115V (%)	73.62	82.60	85.79	87.39	88.36
230V (%)	74.30	82.32	86.17	88.23	89.36
Load (%)	60	70	80	90	100
115V (%)	88.76	88.96	88.96	88.83	88.76
230V (%)	90.03	90.37	90.65	90.75	90.73


**AQC125-48S**
**VIN VS Efficiency**

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.62	89.65	91.29	92.13	92.15


**LOAD VS Efficiency**

Load (%)	10	20	30	40	50
115V (%)	74.20	83.48	85.89	88.16	88.86
230V (%)	82.44	84.02	86.47	89.00	90.12
Load (%)	60	70	80	90	100
115V (%)	89.45	89.46	89.71	89.74	89.65
230V (%)	91.01	91.43	91.86	91.86	92.13

