# **○**— AQM250 Series



# 250W

The extremely high power density AQM250 series of medical external power supplies is fully approved to international medical safety standards. It has been designed with very high efficiency and low standby power, enabling it to meet the latest environmental legislation.

The unit has a fully sealed enclosure complying with IP22 and a smooth surface finish making it easier to keep clean in a clinical setting.

Class I and Class II versions ensure versatility for both hospital and non hospital applications.

#### **Features**

- Medical Safety Approvals
- Home Healthcare approval
- Energy Efficiency Level VI & EU CoC Tier 2 Compliant
- 4th Edition Medical EMC
- IP22 Environmental Rating
- Class I and Class II Versions
- < 0.15W Standby Power
- 0°C to 60°C Operation
- Low Earth Leakage Current
- 3 Year Warranty

#### **AC-DC POWER SUPPLIES**



#### **Applications**







Healthcare

Healthcare

Diagnostic

#### **Dimensions**

6.80" x 2.64" x 1.26" (173 x 67 x 32mm)

#### **Models & Ratings**

Model number <sup>(1)</sup>	Output Voltage	Output Current	Load Regulation	Efficiency <sup>(2)</sup>
AQM250PS12	12.0V	19.0A		92.2%
AQM250PS19	19.0V	13.2A		92.8%
AQM250PS24	24.0V	10.4A	5%	91.6%
AQM250PS48	48.0V	5.2A		92.5%

#### Notes:

- 1. For class II versions, add suffix 'C2' to the end of the part number e.g. AQM250PS24C2.
- 2. Average efficiency at 230VAC.

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### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	85		264	VAC	Derate linearly from 100% load at 90VAC to 85% load at 85VAC
Input Frequency	47		63	Hz	
Power Factor		>0.9			EN61000-3-2 class A
Input Current		2.9/1.3		Α	115/230VAC
Inrush Current			150	Α	230VAC cold start, 25°C
Earth Leakage Current			100	μΑ	264VAC, 60Hz
No load Input Power			0.15	W	
Input Protection	T5A/250V Inte	rnal fuse fitted	in line and neuti	al.	

# Output

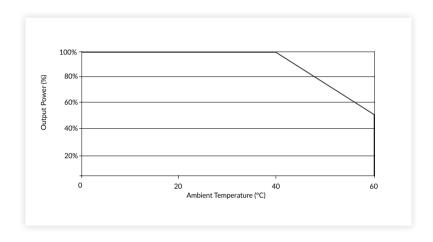
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions		
Output Voltage	12		48	VDC	See Models and Ratings table		
Initial Set Accuracy			±2	%	50% load		
Minimum Load	No minimum lo	No minimum load required					
Start Up Delay		1	1.5	s			
Start Up Rise Time		30	35	ms	115VAC		
Hold Up Time	10			ms	Full load and 115/230VAC		
Line Regulation			±0.5	%	90-264 VAC		
Load Regulation	See Model and	See Model and Ratings table					
Transient Response			4	%	Recovery within 1% in less than 500µs for a 50-75% and 75-50% load step		
Ripple and Noise			1.0	% pk-pk	20MHz bandwidth and 10µF electrolytic capacitator in parallel witl 0.1µF ceramic capacitator		
Overshoot		5	10	%	At turn on/turn off		
Overload Protection			170	%			
Overvoltage Protection	110		180	%	Recycle mains to reset		
Short Circuit Protection	Trip and restar	Trip and restart (hiccup), auto resetting					
Temperature Coefficient		0.2		%/°C			
Patient Leakage Current			100	μA	264VAC, 60Hz		

# **○**— AQM250 Series

### **Environmental**

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature			+60	°C	Derate linearly from 100% load at 40°C to 50% load at 60°C.
Cooling	Natural conv	ection			
Operating Humidity			95	%RH	Non-condensing
Storage Temperature			80	°C	
Operating Altitude			5000	m	
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep, 60 mins for each of 3 axes				

# **Derating Curve**



### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	90			%	See Models and Ratings table
Isolation: Input to Output			4000	VAC	2 x MOPP
Input to Ground			1800	VAC	1 x MOPP (Class I versions only)
Output to Ground			500	VAC	Class I versions only
0 11 11 5	65			1.11-	PFC
Switching Frequency			300	kHz	Main converters
Power Density		11		W/in³	
Mean Time Between Failure		>300		khrs	TELCORDIA SR-322 @ 25°C
Weight		1.9 (860)		lb(g)	

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### **EMC: Emissions**

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Level B	
Radiated	EN33032	Level B	
Harmonic Currents	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

# **EMC: Immunity**

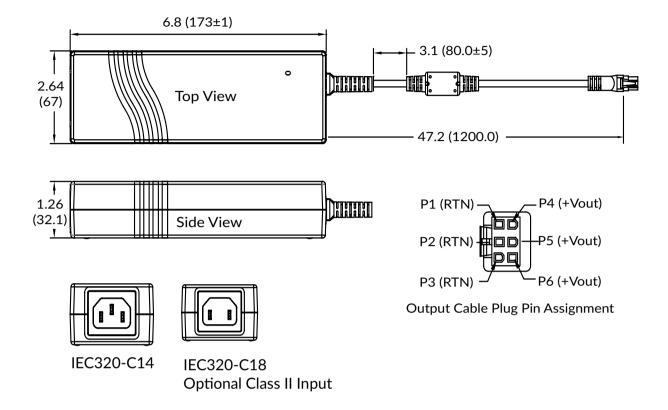
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	4	А	±8kV contact / ±15kV air discharge
Radiated Immunity	EN61000-4-3	10V/m	Α	
EFT/Burst	EN61000-4-4	2	А	
Surge	EN61000-4-5	Installation class 3	А	
Conducted	EN61000-4-6	6V	А	
Magnetic Field	EN61000-4-8	4	А	
		Dip: 30% 25 AC Cycles	A/B	115VAC/100VAC
Dips and Interruptions	EN60601-1-2	Int: 100% 0.5 AC Cycles	Α	
		Int: 100% 1.0 AC Cycles	В	
		Int: 100% 250 AC Cycles	В	

## **Safety Approvals**

Safety Agency	Standard	Notes & Conditions
UL	ANSI/AAMI ES 60601-1 / ANSI/AAMI ES60601-1-11	
CSA	CSA C22.2 No. 60601 / CAN/CSA-C22.2 No. 60601-1-11	Medical
TUV	EN60601-1 / EN60601-1-11	60601-1-11 is only for Class II versions
СВ	IEC60601-1 / IEC60601-1-11	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

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#### **Mechanical Details**



#### Notes:

- $1.\,All\ dimensions\ shown\ in\ inches\ (mm).\ Tolerance\ is\ 0.02\ (0.5)\ maximum,\ except\ output\ cable\ length.$
- 2. Weight: 1.9lbs (860g) approx.
- 3. Output connector: 6 pin Molex Mini-Fit.