AQM200 Series

AC-DC POWER SUPPLIES

200W CONVECTION COOLED

The extremely high power density AQM200 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 use of new technology allows the volume to be typically half that of a traditional design.

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

Applications

Healthcare

Home Healthcare

Medical Diagnostics

Dimensions

166.5 x 54.2 x 33.0mm (6.56" x 2.13" x 1.30")

Models & Ratings

Model number[1]	Output Voltage	Output Current	Total Regulation	Efficiency[2]
AQM200PS12	12.0V	16.0A	5.0%	91.5%
AQM200PS15	15.0V	13.0A		92.0%
AQM200PS19	19.0V	10.6A		92.0%
AQM200PS24	24.0V	8.3A		93.0%
AQM200PS48	48.0V	4.2A		93.5%

Notes:

1. For class II versions, add suffix 'C2' to the end of the part number e.g. AQM200PS24C2.
2. Average efficiency measured at 25%, 50%, 75% and 100% loads at 230VAC.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	85		264	VAC	Derate linearly from 100% load at 100VAC to 85% load at 85VAC
Input Frequency	47		63	Hz	
Power Factor		>0.9			EN61000-3-2 class A
Input Current		2.4/1.0		A	115/230VAC, full load
Inrush Current			150	A	230VAC cold start, 25°C
Earth Leakage Current			500	µA	264VAC, 60Hz, class I versions only
No load Input Power			0.15	W	
Input Protection	T5A/250V Internal fuse fitted in line and neutral.				

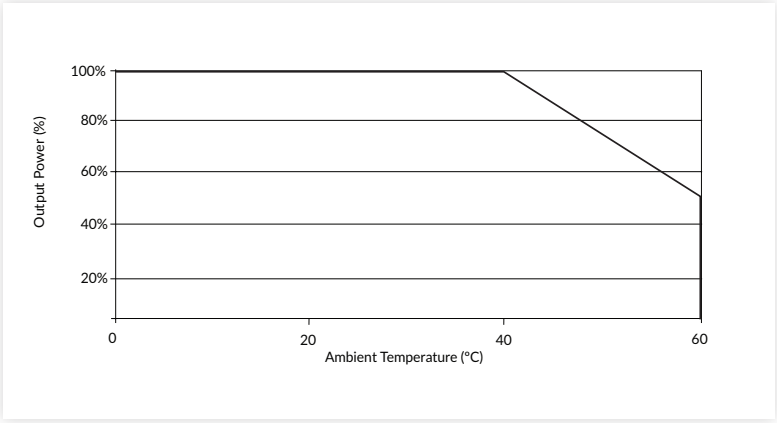
Output

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 load required				
Start Up Delay		1	1.5	s	
Start Up Rise Time		30	35	ms	115VAC
Hold Up Time	10	12		ms	Full load and 115/230VAC
Line Regulation			±0.5	%	90-264VAC
Total Regulation	See model and ratings table, includes initial set accuracy, line and load regulation				
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 with 0.1µF ceramic capacitator
Overshoot		5	10	%	At turn on/turn off
Overload Protection			180	%	
Short Circuit Protection	Trip and restart (hiccup), auto resetting				
Temperature Coefficient		0.2		%/°C	
Patient Leakage Current		85	100	µA	264VAC, 60Hz

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-20		+40	°C	Derate linearly from 100% load at 40°C to 50% load at 60°C, safety approved to 40°C
Cooling	Natural convection				
Operating Humidity	20		80	%RH	Non-condensing
Storage Humidity	10		90	%RH	Non-condensing
Storage Temperature	-20		+80	°C	
Operating Altitude			5000	m	
Shock	IEC68-2-27, 30g, 11ms 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	91.5	92		%	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
Switching Frequency	45			kHz	PFC
	200		300		Main converter
Power Density		27.94		W/cm^3	
Mean Time Between Failure		>300		khrs	TELCORDIA SR-322 @ 25°C
Weight		600 (1.32)		g (lb)	

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55011	Level B	
Radiated			
Harmonic Currents	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

EMC: Immunity

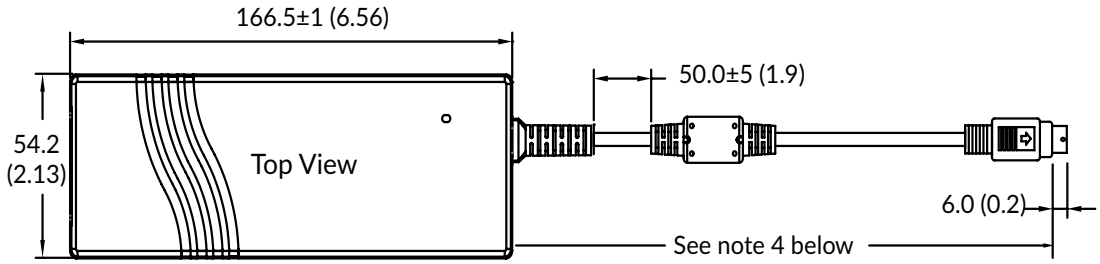
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	4	A	±8kV contact / ±15kV air discharge
Radiated Immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	2	A	
Surge	EN61000-4-5	Installation class 3	A	
Conducted	EN61000-4-6	6V	A	
Magnetic Field	EN61000-4-8	4	A	
Dips and Interruptions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

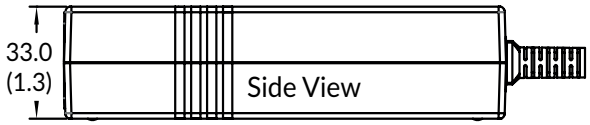
Safety Approvals

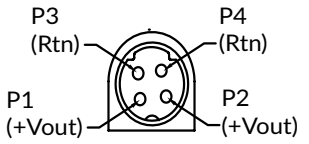
Safety Agency	Standard	Notes & Conditions
UL	ANSI/AAMI ES 60601-1	
CSA	CSA C22.2 No. 60601-1	
TUV	EN60601-1 / EN60601-1-11	60601-1-11 is only for Class II versions
CB	IEC60601-1 / IEC60601-1-11	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

AQM200 Series

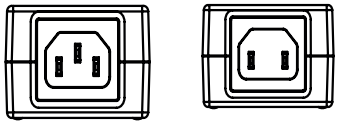
Mechanical Details







Output Cable Plug Pin Assignment



IEC320-C14

IEC320-C18
Optional Class II Input

Notes:

1. All dimensions shown in mm (inches). Tolerance is 0.5 (0.02) maximum, except output cable length.
2. Weight: 600g (1.32lbs) approx.
3. Output connector: Kycon KPPX-4P style.
4. Output connector shell is connected to -Vout on class I versions and floating on class II versions.
5. Output cable length is 1200 (47.2) for 12V and 15V outputs and 1500 (59.0) for all other models.