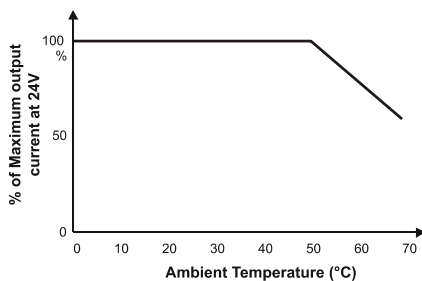


Powerware APR24-3G Rectifier Module

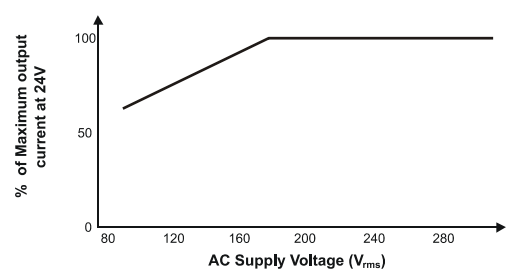
Product Datasheet

AC Input

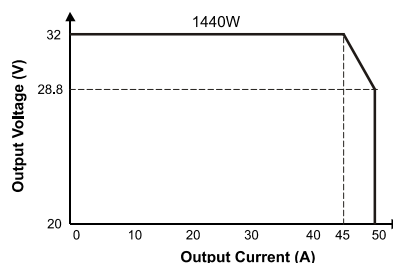
Nominal AC Input:	240V
Rated Operating Ranges:	175 to 275V rms – full output up to 50°C [122°F]
Extended Operating Range:	90 to 300V rms <i>Reduced output power below 175 V (see derating curves)</i>
Frequency Range:	45 to 66Hz
Maximum Input Current:	9.5A rms (175V AC, 20°C)
Efficiency:	90% peak (50 to 100% load, 230Vac)
Power Factor:	>0.99 (50 to 100% load)
Total Harmonic Distortion (THD):	<5% (50 to 100% load, rated ac voltage)
Swell Tolerance:	Rectifier shuts down above 320V <i>Returns to normal operation when input is within operating range.</i>
Input Over-current Protection:	Fuses (phase and neutral) HRC
AC Fuse Ratings:	16A / 250V



Output current derating with temperature
(AC Input voltage > 175V)



Output current derating with AC input voltage
(Ambient temperature ≤ 50°C)



Output Power/Current Characteristic

DC Output

Nominal Voltage:	24V
Adjustable Voltage Range:	21.5 to 32V
Rated Output Power:	1440W
Rated Output Current:	50A @ 28.8V (Constant current)
Preset Accuracy	±0.1V
Regulation:	±0.1V <i>Constant voltage mode, AVC enabled from supervisory module.</i>
Default (Fail-safe) voltages	
Loss of System Communication:	Output voltage resets to system preset voltage
Preset voltage:	27 ±0.1V (manufacturer preset)
Hold-up Time:	10ms <i>At rated output power and rated AC voltage the DC output voltage change is 27.25V to 24V.</i>
Start-up time:	Soft start
Protection	
Current Limit:	Factory set to 50A
Over Temperature Turndown:	Automatic power turndown. See temperature derating graphs.
Over Voltage Shutdown:	<3ms delay
Short-circuit:	Full short-circuit protection. Output current limited to less than 130% of rated output current. <i>Rectifier will continue normal operation after short-circuit is removed. Non-urgent (Current Limit) alarm generated.</i>
Noise under nominal conditions	
Ripple (<100Hz)	<10mV rms (unweighted)
Audio Frequency (300Hz – 3.4kHz):	<2mV (psophometric)
Wide band (5Hz – 1MHz):	<10mV rms (unweighted)
Peak to peak (0 – 20 kHz):	<200mV p-p (unweighted)
Discrete frequency (3.4kHz – 150kHz):	<5mV rms (1kHz wide selective frequency)

Environmental Requirements

Ambient Temperature	
Rated Operating Range:	-10°C to +50°C [14°F to 122°F]
Extended Operating Range:	-40°C to +70°C [-40°F to 158°F] <i>Output derates above 50°C (or 30°C at low AC voltage) and below 10°C [50°F]. Refer to derating graphs.</i>
Humidity	
Nominal:	50% RH
Range:	< 95% RH (non condensing)
Altitude:	< 3000m [9800']

Mechanical

Dimensions H, W, D:	3U (130mm, 5.1"), 42mm (1.6"), 266mm (10.5") overall
Weight:	1.7kg [3.7lb]
Connector:	PCB Edge
Cooling:	Temperature controlled, high reliability fan
Front panel LEDs:	
Power on:	Green
Minor alarm:	Amber
Major alarm:	Red

Compliances

Safety:	AS/NZS 60950, UL 60950, IEC 60950
EMC – immunity	
Electrostatic discharge:	EN 61000-4-2
Radiated radio frequency:	EN 61000-4-3
Electrical fast transients:	EN 61000-4-4
Surge:	EN 61000-4-5
Conducted radio frequency:	EN 61000-4-6
Dips, interruptions & variations:	EN 61000-4-11
EMC – emissions	
Conducted emissions (AC):	EN 55022 / CISPR 22 (Class B)
Conducted emissions (DC):	EN 300 386 (Class A)
Radiated emissions:	EN 55022 / CISPR 22 (Class B)
Harmonics:	EN 61000-3-2
Fluctuations and flicker:	EN 61000-3-3

Certifications (pending)

Europe	CE-mark
USA	UL and FCC (Pending)
Canada	CSA and IC
China	MII
Australia	C-tick
New Zealand	C-tick, Telepermit