POWERWARE
UNINTERRUPTIBLE POWER SYSTEMS

FERRUPS® Rackmount 60Hz

Unmatched reliability in configurable power protection for computers and telecommunications equipment

Features

- Active Voltage Regulation converts power from almost any AC source into computer grade Power
- Eliminates harmful harmonic currents from entering a building's wiring, where they can disrupt computer operations
- Enhanced diagnostics initiates auto matic startup and scheduled tests on the logic board, battery and other critical systems
- Provides regulated output voltage without drawing power from batteries keeping the batteries fully charged from unexpected blackouts
- Complete offering of power management software included to ensure data integrity

Warranty

- 2-Year Limited Warranty
- $25,000 Load Protection Guarantee (U.S. and Canada)

Product Snapshot	
Rating:	850 VA - 7kVA
Input Voltage:	120/208/240
Output Voltage:	120/208/240
Frequency:	60 Hz
Configuration:	Rackmount

Powerware FERRUPS® uninterruptible power systems furnish unmatched reliability in configurable power protection for computers and telecommunications equipment. Patented ferroresonant technology delivers "bulletproof" power protection, overcoming spikes, sags, surges, noise, and lightning. Powerware-exclusive SineSense™ provides clean, reliable power while conserving batteries during blackouts.

Extensive configurability and customization options make FERRUPS the ideal power protection solution with a wide range of voltages, frequencies, runtimes, power cords, and receptacles. FERRUPS prevents the backfeed of harmonic currents into building wiring which can disrupt computer operations. Redundant power paths assure high fault-tolerance and optimum uptime. Galvanic isolation separates input from output, filtering line noise and surges.

FERRUPS also features precision voltage regulation with no battery discharge down to 38% below nominal (depending upon load); and over 80 user-programmable diagnostic and communications functions. FERRUPS has won Midrange Systems' "Buyer's Choice" award six of the last eight years.

FERRUPS models include free Powerware Software Suite power management software with connectivity cable, and are BestLink™ SNMP/WEB-ready for remote management. FERRUPS covers up to US$25,000 for damage to connected equipment resulting from a spike or surge (U.S. and Canada only).

invensys

FERRUPS® Rackmount 60 Hz Specifications

Model	850VA	1.15kVA	1.4kVA	1.8kVA	2.1kVA	3.1kVA	4.3kVA*	7kVA*
Part No.	FES850VA	FES1.15kVA	FES1.4kVA	FER1.8kVA	FER2.1kVA	FER3.1kVA	FER4.3kVA	FER7kVA
Capacity (kVA/kW)	.8/.6	1.15/.8	1.4/1	1.8/1.25	2.1/1.5	3.1/2.2	4.3/3	7/5
Dimensions inches	9.75 x 16 x 21.25			9.75 x 16 x 26.25*			19 x 16 x 26.25	
H x W x D mm	248 x 406 x 540			248 x 406 x 667			483 x 406 x 667	
Front Panel inches	10.5 x 19			10.5 x 19			19.25 x 19	
H x W mm	267 x 483			267 x 483			489 x 483	
Battery Pack inches	Internal			Internal			8.3 x 16.25 x 24.25	
H x W x D mm							211 x 413 x 616	
Weight lb	105	135	150	209	220	238	495	580
(includes batteries) kg	48	62	68	95	100	108	225	263
Input - Hardwired Connection	120=10A	120=15A	120=15A	120=20A	120=25A	120=35A	120=40A	120=65A
Circuit Breaker Requirement	208=5A	208=10A	208=10A	208=15A	208=15A	208=20A	208=25A	208=40A
(Contact factory for	240=5A	240=5A	240=10A	240=10A	240=15A	240=15A	240=20A	240=35A
powercord options.)								
Output Connection	Hardwired output is standard. Contact factory for receptacle options.							
Typical Runtime: full load	11	19	14	31	24	14	26	12
(minutes) half load	28	49	36	73	58	35	61	33
Operation								
Nominal Input Voltage	120/208/240							
Input Voltage Range	+15%, -20%							
Operating Frequency	60 Hz (on-line - ±0.01 Hz to ±3 Hz adjustable, on inverter - ±0.005 Hz)							
Nominal Output Voltage	120/208/240							
Output Voltage Regulation	±3% for input voltages +15%, -20% of nominal. +5%,-8.3% for any line , load or battery condition.							
Output Voltage Waveform	Sine Wave							
Output Voltage	THD 5% or less THD at rated kW load							
Overload Capacity	150% surge and 125% for 10 minutes on-line. 150% surge and 110% for 10 minutes on inverter.							
Transfer Time	0 ms							
Lightning, Surge, and	2000:1 spike attenuation using C62.41 and C62.45 Category A and Category B tests.							
Noise Protection	Noise Rejection: Common Mode - >120 dB, Normal Mode - >60dB							
Efficiency % (on-line)	85	88	88	90	90	91	90	90
Heat (on-line) BTU/hr.	361	372	465	474	568	742	1138	1896
kW/hr.	0.106	0.109	0.136	0.139	0.166	0.217	0.333	0.556
Battery Charger (DC)	12V, 4A	12V, 4A		48V, 4A			48V, 5A	
Safety Certification	UL, CSA (CUL)							
EMI Compliance	FCC Class A							
Testing Standards	ANSI/IEEE C62.41 (1980); ANSI/IEEE C62.45 (1987); IEC 801-2, 801-4, 801-5							
Communication	DB25 communication port with RS-232 serial communications, alarm and inverter contact closures, and EPO shutdown.†							
Environmental								
Operating Temperature	0° to 40° C							
Storage Temperature	-20° to +60° C (-20° to +40° C if battery not removed)							
Relative Humidity	5 to 95% without condensation							
Audible Noise (dBA)	48	50	50	50	50	51	50	52
Altitude	3050 m (10,000 ft.) maximum							

***.8, 2.1 and 3.1kVA models can be configured with 21.25 inch depth. Consult factory. †4.3kVA and 7kVA models include front panel keypad and display. All specifications typical and are subject to change without notice.**

Powerware offers a complete line of Uninterruptible Power Systems from 250VA to more than 4000kVA.

Invensys Powerware Division
8609 Six Forks Road
Raleigh, NC 27615 U.S.A.
Toll Free: 1.800.356.5794
or 919.872.3020
Fax: 1.800.753.9433
www.powerware.com

LTP-0224
Revision 5/02
Reprint 5/02

Europe
Finland: 358 94 52 661
France: 33 1 6012 7400
Germany: 49 721 961790
Italy: 39 02 6600661 2
UK: 44 (0) 1753 608700

Southeast Asia
Singapore: 65 6861 0377

China and North Asia
Hong Kong: 852 2745 6682

Japan
Shinagawa, Tokyo: 81 3 3447 4441

Australia and South Pacific
Sydney, Australia: 61 29878 5000

Canada
Toronto, Ontario: 416.798.0112

Brazil
Sao Paulo, Brazil:
55 11 3849 8199

Mexico
Col. Napoles, Mexico:
525.488.3333