

Power

AFP 10 Series UPS

120Vac Modular Fire Protection System



- >92% Energy Efficiency
- Operates at optimal efficiency at 50 to 100% of the load
- All modules are hot swappable
- Scalable architecture and modular design
- Unique Twin Sine Inverter (TSI) technology filters out harmonics on the AC input; provides AC power filtering and conditioning
- Available N+1 Redundancy (5kVA and 7.5kVA); only one module is required for redundancy, rather than an entire system.

The AFP 10 is a continuous duty, single-phase, double-conversion, solid-state uninterruptible power supply designed specifically for fire protection alarm/signal systems. Its operational level of greater than 92% power efficiency results in less power usage than typical UPS systems. With an optimal system efficiency at 50 to 100% of load, additional inverter and/or rectifier modules may be added to the system with no negative impact on system efficiency.

Rectifiers charge the batteries only when necessary and the charging capacity of the system rectifiers is proportional to battery capacity. This optimizes battery recharge time and minimizes the number of rectifiers necessary to support the batteries.

The unique Twin Sine Inverter (TSI) modules provide harmonic filtering and conditioning of the AC input and AC output power. Compensation for fluctuations in input power combined with full sine wave output eliminates the need to draw power from the DC supply extending the operational life of the DC system.

All modules are hot swappable; each module can disconnect itself from the system in event of failure; and each module can operate as part of a bypass of AC power to the load. Additionally, the scalable architecture of the AFP 10 allows flexibility for easy future system expansion.



AFP UPS System Components	
Cordex™ switched mode battery charger/rectifier	
Pulse-Width Modulated (PWM) modular Inverter with built in modular static switch and internal AC-DC rectifier	
Manual make before break (MBB) bypass switch	
Microprocessor Controlled Logic and Control Panel for DC section and AC section	
Input and Output Circuit Breakers	

Nominal Specifications

UPS Input	
Input Voltage:	120Vac
Input Voltage Requirement:	Phase, 2 Wire + Ground
Voltage Variation:	+10% to -15%
Input Current:	12A Max @ 90-135Vac per each rectifier module, 21A Max @ 120Vac per each inverter module
Rated Frequency:	50/60 Hz
Frequency Range:	45 - 66 Hz
Power Factor:	> 0.98 at nominal conditions and 50-100% load
Start Up Delay:	Programmable up to 120 seconds to enable stagger-start of multiple rectifiers and to minimize the effect on a supply source
Soft start:	User adjustable to at least 5 seconds (not including start-up delay time) and is determined by output current limit ramp-up
Inrush Current:	≤ full load steady state current of the rectifier within rated limits
Input Current THD:	< 5% Total Harmonic Distortion (THD) at 100% load
Input Transient Suppression (Surge Withstandability):	Meets ANSI/IEEE C62.41 Category B3
Protection:	10kA-interrupting capacity fuses/circuit breakers in active and neutral lines
Efficiency:	>92% at nominal conditions and 50-100% load

UPS Output	
Rated Voltage:	120Vac
Output Voltage Requirements:	1 Phase, 2 Wire + Ground
Output Capacity:	5.0/7.5/10.0 kVA
Rated Load Power Factor:	0.8 lagging
Voltage Regulation:	+/- 2%
Frequency:	50-60Hz.
Frequency Accuracy:	0.03%
Frequency Regulation:	+/- 0.01% free running
Transient Voltage Recovery:	0.4ms maximum to within 2% of nominal
Overload Cap. (on inverter):	110% continuously, 150% for 5 sec.
Overload Cap. (on bypass):	1000% for 10ms, 125% for 10 min.
Crest Factor:	3.5
Harmonic Voltage Distortion:	1.5% THD maximum, 1% maximum for any single harmonic (linear load)
MTBF:	230,000 hrs.
Efficiency:	>90%

Mechanical

Enclosure dimensions HxWxD (in/mm)	52 x 26 x 24 / 1320 x 660 x 610
Weight (lb/kg), configuration-dependant	310 to 370 / 140 to 168

Environmental

Operating Temperature:	
UPS:	32° to 104°F (0° to 40°C)
Battery:	68° to 77°F (20° to 25°C)
Storage Temperature:	
UPS:	-4° to 140°F (-20° to 60°C)
Battery:	Prolonged storage above 104°F (40°C) causes rapid battery degradation
Relative Humidity:	90% (non-condensing)
Audible Noise:	65 dBA @1m distance
Agency Compliance:	ANSI C62.41 (IEEE 587) UL 1481 National Electrical Code (NFPA-70) NEMA PE 1-2003 OSHA

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