



产品概述 General



单进单出机型
single-in single-out type

本公司研制的 YFG60 系列单进单出工频智能型在线式 UPS，容量从 1KVA-20KVA。系统采用在线式双变换拓扑架构设计，完全消除了电网的各种干扰，AC/DC 采用带 PFC 的升压整流电路，使 UPS 的输入功率因数达 95% 以上，完全消除了 UPS 对电网的谐波污染，DC/AC 变换器采用 SPWM 脉宽调制技术、IGBT 功率模块以及输出隔离变压器，使 UPS 的输出为一稳频稳压、滤除杂讯、不受电网波动干扰、低失真度的纯净正弦波电源，并具有带载能力强，负载兼容性好、市电输入电压、频率范围宽、优异的发电机匹配性、输出无切换时间等特点，极大地满足各种应用环境的需求；完善的保护体系，提升了系统运行的稳定性、可靠性；智能化电池管理技术，极大地延长电池的使用寿命；亲善的 LCD 界面设计，使人机沟通零距离；UPS 与 PC 之间通过 RS232 通讯口达到了了解 UPS 的工作历史、参数监控、自动开关机、无人值守及远程网络监控的功能（透过 SNMP），可适应先进的网络系统使用；在网络系统的运行中，稳定高于一切的理念。

Our company has succeeded in developing YFG60 series single-in single-out power frequency intelligent online UPS of capacity 1KVA-20KVA. The system adopts the online double-conversion topological structure design, which can be kept away from all kinds of interference for the power grid completely. AC/DC adopts the boost rectifier circuit with PFC so that the input power factor of UPS can exceed 95%, which can remove the harmonic pollution of UPS to the power grid completely. DC/AC converter adopts SPWM pulse-width modulation technology, IGBT power module and output insulating transformer so that the output of UPS is a pure sine wave power supply with stable frequency and voltage, filtration of noise, being free of interference from power grid fluctuation and low degree of distortion, which is also featured by strong carrier capacity, good compatibility of load, input voltage of utility power, wide frequency range, excellent compatibility of dynamo, no switching time for output, etc. Therefore, it can meet great needs for various application environments. Its perfect protection system has improved the operational stability and reliability of the system. The intelligent battery management technology has prolonged the service life of battery greatly. The user-friendly LCD interface design has contributed to zero distance for man-computer communication. Via RS232 communication interface between UPS and PC, such information on UPS can be got as its working history, monitor of parameters, automatic on/off, functions of no guard and remote network monitor (via SNMP), which is applicable for advanced network systems. For the operation of network system, the stability is above all.

产品特性 Product features

高可靠性

- 1 采用双转换在线式的结构设计，隔绝了外界电源的干扰
- 2 良好的过载能力
- 3 100% 非线性负载能力
- 4 IGBT、SPWM 脉宽调制技术
- 5 工业级的 UPS 设计

超安全性

- 1 具备输出隔离变压器，免除杂讯，雷击对抗电器的影响
- 2 配有静态旁路，维修旁路，电池维修旁路，不需要担心负载的使用
- 3 冷开机功能，即使停电也能紧急启动使用

灵活性

- 1 不同的负载及系统，可单机、1+1 并机或者 N+1 多机运行
- 2 模块化设计，维护方便
- 3 可选择的电池检测包，对电池进行智能管理

经济性

整机效率高于 90%，ECO 模式下效率达到 95% 以上

人性化界面

LED/LCD 指示面板操作界面，工作效率和读取信息一目了然

智能化

通过提供的 RS232(PS422)、SNMP(可选件)、RJ45 等通讯接口，可实现远程管理和 TVSS 功能

High reliability

- 1 Double-conversion online structure design isolates the interference from external power supply
- 2 Strong overload capacity
- 3 100% non-linear load capacity
- 4 IGBT and SPWM pulse-width modulation technology
- 5 Industrial-grade UPS design

High security

- 1 Provided with output insulating transformer, free of impacts on resistor by noise and lightning stroke
- 2 Provided with static bypass and maintenance bypass and battery maintenance bypass, free of worries about the use of load
- 3 The cold-start function can realize the emergency start and use even if on power failure

Flexibility

- 1 Different loads and systems, available for stand-alone, 1+1 parallel-machine or N+1 multi-machine operation
- 2 Module design, easy for maintenance
- 3 Optional battery check package for intelligent management of battery

Economy

Overall efficiency higher than 90%, up to 95% above under ECO mode

Humanized interface

Operation interface of LED/LCD indication panel with clear information on work efficiency and easy for reading

Intelligentization

Achieve remote management and TVSS functions via such provided communication interfaces as RS232 (RS422), SNMP (optional) and RJ45

YFG60 系列不间断电源

Series uninterruptible power supply



适用范围 Scope of application

计算机及外围设备
信息传输系统
过程控制系统
精密测量设备
核子医疗设备
IC 半导体厂, 封装厂
化学工程系统
自动测试系统
纺织刺绣控制
实验设备
监控保安系统
消防照明系统
紧急逃生系统
网络系统及服务器
实时分析操作系统
电台发射及接收系统
不容断电的工业应用领域
卫星通讯系统

Computer and peripheral equipment
Information transmission system
Process control system
Precision measurement equipment
Nucleon medical equipment
IC semiconductor plant and packaging plant
Chemical engineering system
Automatic test system
Textile and embroidery control
Experimental equipment
Monitor and security system
Fire control and lighting system
Emergency escape system
Network system and server
Real-time analysis operating system
Radio sending and receiving system
Industrial application fields requiring uninterrupted power
Satellite communication system

技术参数 Technical parameters

YFG60-2kVA-20kVA 单进单出机型 single-in single-out type						
规格 Spec.	2kVA	3kVA	6kVA	10kVA	15kVA	20kVA
容量 (kVA/kW) Capacity	2/1.6	3/2.4	6/4.8	10/8	15/12	20/16
输入电压 Input voltage	单相两线 + 地线 Single-phase two-wire + earth wire					
噪音 Noise	≤ 52dB(距离 distance 1m)					
尺寸 Dim.	530 × 264 × 592			620 × 343 × 725		
重量 (kg) (不含电池) Weight (kg) (exclude battery)	40	45	80	145	160	180
电池电压 Battery voltage	DC192V					

同类机型功能比较 Function comparison with machines of the same kind

品牌 Brand	DYG60	同类机型 Machines of the same kind
性能 Performance 独特的旁路 AC 高低压保护 (现信息产业部入网强制检验项目) Unique low/high-voltage protection for bypass AC (a compulsory inspection item for network access by the Ministry of Information Industry at present)	有 Available	无 N/A
因特网上电池实时、定时充放电、自检功能 Real-time and timing charge and discharge and self-inspection function for battery on internet	有 Available	无 N/A
因负载大小自动调节电池放电终止电压 (国外大功率 UPS 延长电池使用寿命技术) Regulate the battery discharge and terminate the voltage automatically in accordance with the load size (foreign technology for longer battery service life of heavy-duty UPS)	有 Available	无 N/A
无人值守功能 (CPU 控制) No-guard function (CPU control)	有 Available	无 N/A
功率器件功率余量大, 具有极高抗冲击能力 Power devices have big power allowance, possess high impact resistant capacity	6K: 200DY 模块 module × 2 10K: 300DY 模块 module × 2 15K: 400DY 模块 module × 2	6K: 150DY 模块 module × 2 10K: 200DY 模块 module × 2 15K: 300DY 模块 module × 2
逆变器功率余量大 Large power allowance of inverter transformer	足功率容量 Full power capacity	80% 功率容量或更低 80% power capacity or lower
带载能力强 Strong load-bearing capacity	可 100% 负载长期运行工作 A available for long-time running with 100% load	只能 80% 负载或更低负载长期运行工作 Only available for long-time running with 80% load or lower
体积小、重量轻 Compact and light	与同功率级高频机体积重量相近 Similar volume and weight as high-frequency machines with the same power level	比同功率级高频机体积重量大 Larger volume and weight than high-frequency machines with the same power level
逆变器效率高 High efficiency of inverter	大于 90% Larger than 90%	小于 90% Less than 90%



通用参数 General parameters

输入 Input	频率 Frequency	50Hz/60Hz ± 10%
输出 Output	功率因素 Power factor	≥ 0.95
	电压 Voltage	220V ± 0.5%
	电压调整 Voltage regulation	稳态 ± 1%，动态 ± 2%，(0-100% 负载变化 < 20ms) Steady state ± 1%, dynamic state ± 2%, (0-100% variation in load < 20ms)
	频率稳定度 Frequency stability	50Hz/60Hz ± 0.05% (电池供电时) 50Hz/60Hz ± 0.05% (in case of battery operation)
	频率畸变率 Frequency distortion rate	小于 1Hz/秒 Less than 1Hz/s
	瞬间加载情况 Instantaneous load status	± 0.4% (100% 瞬间负载变化) ± 0.4% (100% instantaneous load changes)
	谐波失真 Harmonic distortion	线性负载小于 3% (满载)，整流总谐波小于 5% Linear load less than 3% (full load), overall harmonic of rectification less than 5%
	过载容量 Overload capacity	125% ≥ 10min, 150% ≥ 20s
	波形 Waveform	正弦波 Sine wave
	效率 Efficiency	输入交流至输出交流 Input AC to output AC
转换时间 Switching time		市电失传或复原 Cut-off or recovery of utility power
电池 Battery	UPS 转旁路 UPS converted to bypass	小于 4 毫秒 Less than 4ms
	充电时间 Charging time	完全充电 8 小时后充电至 90% After the full charge, charge to 90% in 8h
警告声 Warning sound	电池放电 Discharge of battery	主电源失效，每 4 秒鸣叫一次 Failure of main power supply, beeping every 4s 电池低压，每 0.5 秒鸣叫一次 Low voltage of battery, beeping every 0.5s 电池放电停止，连续鸣叫 Stop of battery discharge, continuous beeping
	故障异常 Abnormal failure	连续鸣叫 Continuous beeping
	内部保护装置 LCD 面板 LCD panel of internal protector	电池 Battery
外部环境 External environment	过载 Overload	过载 (110~150%) 30 秒后自动跳到 BYPASS，自动恢复 Automatic trip to BYPASS after 30s of overload (110~150%), automatic recovery
	过温保护 Overheating	UPS 内部温度 > 85°C，自动跳至 BYPASS Automatic trip to BYPASS for internal temperature of UPS > 85°C
	输出短路 Short circuit of output	限流，自动关机，保险丝及无熔丝开关保护 Current limiting, automatic shut, fuse and no-fuse switch protection
	UPS 异常 Abnormal	自动跳至 BYPASS 由市电供电 Automatic trip to BYPASS for utility power supply
	UPS 杂讯滤波器 Noise filter	10~10KHz at 40dB; 100KHz~100MHz at 70dB
	LCD 显示器 LCD display	显示输入、输出电压、频率、电池电压、输出功率 (%)
	电池低压 Low voltage of battery	1 只 LED，电池低电压时会明亮 One LED, lights up in case of low voltage of battery
	温度 Temperature	-10°C ~ 50°C
	相对湿度 Relative humidity	10%~90% (非结露性) 10%~90% (no dew)
	操作情形 Operational status	海拔 ≤ 3000m Altitude ≤ 3000m

独有的并联冗余结构 Unique parallel redundancy structure

只有充分了解关键负载对电源的要求，才能设计出令人满意的 UPS 系统，本系统采用最先进的技术，以其独有的概念，推出了多台 UPS 并联冗余结构 (RPA)，确保达到系统的最高可靠性。本系列采用的并联系统令 UPS 的每一关键部位均具有备份保证，并使其得到充分控制，因此是名副其实的并联冗余。

The satisfactory UPS system can only be designed on the basis of having a full understanding on key load's requirements for power supply. This system adopts the latest technology and unique concept to launch multi-UPS parallel structure (RPA) to ensure the maximum reliability of the system. The parallel system adopted by this series provides backup guarantee and sufficient control for every key part, thus achieving the parallel redundancy really.

