

KSTAR

UPS Solution

Robust Transformer-based
UPS Series
(1~800kVA)



Company Profile

Founded in 1993, Shenzhen KSTAR Science and Technology Co., Ltd. (Stock code: 002518) is a global leader in the smart energy field. Kstar focused on the R&D and manufacturing of UPS, Precision Cooling and MDC (Modular Data Center), Battery, PV, ESS and EV Charger.



Founded in: 1993 **30+ years**
Listed in: 2010 **Stock Code:002518**



Key Products



UPS



Cooling & MDC



Battery



PV



ESS



EV Charger



Listed

Listed on SZSE



2

R&D Centers



8

Facilities



180+

180+ Markets



670+

R&D Employees



4300+

4300+ Employees

Market Achievement



**Global
UPS Supplier**

Data source: Omdia 2024



**China UPS Selling
Local Brands**

Data source: CCID Consulting
Annual Research Report on China's UPS
Product Market in 2023-2024



**China Single-rack Modular
Data Center Market Share**

Data source: ICT research
Annual Report on China's Modular Data
Center Product Market in 2023-2024



**China Lead-acid
Battery Market Share**

Data source: ICT research
Report on China's UPS Supporting Lead-Acid
Battery Product Market in 2023-2024

They Are Using Kstar



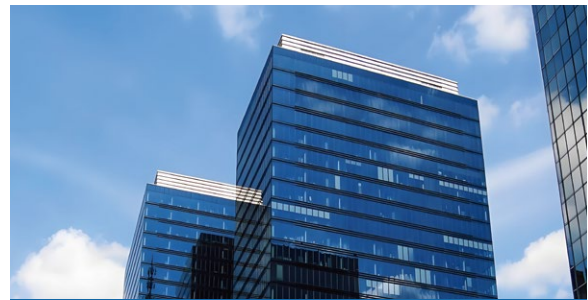
Beijing Olympic Games



Agricultural Bank of China Inner Mongolia Data Center



Shanghai Securities Waigaoqiao Earth Station



China's Leading Internet & E-commerce Giant A



Shanghai Telecom Data Center



Peking University Biomedical Imaging Technology Cluster Large Facility



Jinan Metro



Ruili to Menglian Expressway Electromechanical Project

| | | |
|---|-------------------------------------|----|
| ★ | Robust Transformer-based UPS Series | |
| 1 | GP800 Series (1~20kVA) | 04 |
| 2 | MASTER Series (6~40kVA) | 06 |
| 3 | EPI Series (8~40kVA) | 08 |
| 4 | EPOWER Series (10~800kVA) | 10 |
| 5 | EPOWER-L Series (10~160kVA) | 14 |
| 6 | EPOWER-H Series (10 ~ 600kVA) | 16 |



High Reliability Design

- ◆ Double Conversion on-line design, which makes the output a pure sine wave source with tracking frequency, phase-lock and voltage regulation, low distortion and without power fluctuation interference, providing the load with more comprehensive protection

Battery Cold Start Function

- ◆ The UPS can be start directly by battery group when no utility access in, which meets the emergent needs of user
- ◆ Strong cold start ability, which can do the cold start operation when full load

Wide Input Range

- ◆ Wide input voltage range up to: 165~275Vac , avoid frequently switching to battery mode, which adapt to the areas with harsh environment
- ◆ Wide input frequency range, ensure all types of fuel generators connected work stable

Optimization of High-performance Battery

- ◆ Advanced floating switching and charging technology maximums the activation of the battery, thus saves the charging time and extends the battery life

Strong Protection for Load

- ◆ Built-in isolation transformer, strong anti-interference ability, provides more comprehensive protection

Comprehensive and Reliable Protection

- ◆ Self-diagnosis function before start-up, avoid the risks that the failure may lead to
- ◆ The multi-protections such as overload, short-circuit, over-temperature, battery under voltage, battery over-charge and so on greatly ensure the system stability and reliability
- ◆ Built-in static electronic bypass switch, when UPS fails, it can transfer to bypass mode and continue to provide power for load by AC
- ◆ DC start function The UPS can be started directly without AC , which meet the emergent needs of the user

User-friendly Network Management

- ◆ Communication with computer can be realized by RS232 with corresponding monitoring software. The various parameters can be shown on the communication interface
- ◆ External is optional The UPS with remote network management capability can provide real-time data for communication and management through a variety of network management systems

Technical Specifications

| MODEL | GP801 | GP802 | GP803 | GP804 | GP806 | GP808 | GP810 | GP812 | GP815 | GP820 | |
|--------------------------------|--|-------------|--------------|--------------|--------------|------------------------------------|--------------|-------------|-------|-------|--|
| Capacity (kVA/kW) | 1/0.8 | 2/1.6 | 3/2.4 | 4/3.2 | 6/4.8 | 8/6.4 | 10/8 | 12/9.6 | 15/12 | 20/16 | |
| INPUT | | | | | | | | | | | |
| Nominal Voltage (Vac) | 220/230 | | | | | | | | | | |
| Operating Voltage Range (Vac) | 165~275 | | | | | | | | | | |
| Operating Frequency Range (Hz) | 50/60 (±5%) | | | | | | | | | | |
| Power Factor | ≥0.97 * | | | | | | | | | | |
| OUTPUT | | | | | | | | | | | |
| Output Voltage (Vac) | 220 (±0.5%)/230 (±0.5%) | | | | | | | | | | |
| Output Frequency (Hz) | 50/60 (±0.5%) | | | | | | | | | | |
| Crest Factor | 3:1 (Max) | | | | | | | | | | |
| Efficiency | Up to 82% | | | Up to 84% | | | Up to 85% | | | | |
| Harmonic Distortion (THDv) | ≤2% (Linear load) | | | | | | | | | | |
| BATTERY | | | | | | | | | | | |
| Battery Voltage (Vdc) | 48 or 192 | | | | 192 | | | | | | |
| SYSTEM FEATURES | | | | | | | | | | | |
| Transfer Time (ms) | 0 (Line mode → Battery mode) | | | | | | | | | | |
| Overload | 110%≤Load≤150%/1min; >150%/200ms, to Bypass | | | | | | | | | | |
| Communication Interface | RS232, RS485 (Optional), EPO (Optional), Dry contact (Optional), SNMP (Optional) | | | | | | | | | | |
| ENVIRONMENTAL | | | | | | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | | | | | | |
| Storage Temperature (°C) | -25~55 | | | | | | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | | | | | | |
| Altitude (m) | <1500 | | | | | | | | | | |
| Noise Level (dB) | <60 | | | | | | <65 | | | | |
| PHYSICAL | | | | | | | | | | | |
| Dimension W×D×H (mm) | 230×580×720 (S)/250×500×635 (H) | | | | | 305×655×864 (S) 250×500×635 (H) | | 305×585×864 | | | |
| Net Weight (kg) | 80/32 (S/H) | 85/36 (S/H) | 99/40 (S/H) | 102/45 (S/H) | 108/50 (S/H) | 110/60 (S/H) | 115/65 (S/H) | 115 | 130 | 145 | |
| Shipping Weight (kg) | 88/40 (S/H) | 93/44 (S/H) | 107/48 (S/H) | 110/53 (S/H) | 116/58 (S/H) | 118/68 (S/H) | 123/73 (S/H) | 125 | 140 | 155 | |
| STANDARDS | | | | | | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | | | | | | |
| Performance | IEC/EN 62040-3 | | | | | | | | | | |

* With optional filter

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MASTER Series

6~40kVA

3:1 phase PF: 0.8



High Reliability Design

- ◆ Double Conversion on-line design, which makes the output a pure sine wave source with tracking frequency, phase-lock and voltage regulation, low distortion and without power fluctuation interference, providing the load with more comprehensive protection

Battery Cold Start Function

- ◆ The UPS can be start directly by battery group when no utility access in, which meets the emergent needs of user.
- ◆ Strong cold start ability, which can do the cold start operation when full load

Wide Input Range

- ◆ Wide input voltage range up to: 304~456Vac, avoid frequently switching to battery mode, which adapt to the areas with harsh environment
- ◆ Wide input frequency range, ensure all types of fuel generators connected work stable

Optimization of High-performance Battery

- ◆ Adapt intelligent battery management (ABM) technology, thus extending battery life and reducing battery maintenance times
- ◆ Advanced floating switching and charging technology maximums the activation of the battery, thus saves the charging time and extends the battery life

Strong Protection for Load

- ◆ Built-in isolation transformer, strong anti-interference ability, provides more comprehensive protection

Comprehensive and Reliable Protection

- ◆ Self-diagnosis function before start-up, avoid the risks that maybe lead to the failure
- ◆ The multi-protections such as overload, short-circuit, over-temperature, battery under voltage, battery over-charge and so on greatly ensure the system stability and reliability
- ◆ Advanced phase-locked synchronization technology and dual electronic static output switches, ensure the switching operation between bypass and inverter without any disturbance. When UPS fails, it can transfer to bypass without interruption to provide AC power to load and provide the alarm information as well
- ◆ DC start function. The UPS can be started directly without AC, which meet the emergent needs of the user



User-friendly Network Management

- ◆ Chinese and English language selectable via LCD panel
- ◆ RS232 communication interface
- ◆ RS485 communication interface (Support ModBus protocol)
- ◆ SNMP card (Optional)
- ◆ Events log can be record in the LCD panel
- ◆ Dry contact signal port are available

Technical Specifications

| MODEL | M6K | M8K | M10K | M15K | M20K | M30K | M40K |
|--------------------------------|--|-------|------|-------|--------------|-------|-------|
| Capacity (kVA/kW) | 6/4.8 | 8/6.4 | 10/8 | 15/12 | 20/16 | 30/24 | 40/32 |
| INPUT | | | | | | | |
| Operating Voltage Range (Vac) | 380/400 (±20%), (3Ph + N + PE) | | | | | | |
| Operating Frequency Range (Hz) | 50/60 (±5%) | | | | | | |
| Power Factor | ≥0.97 * | | | | | | |
| OUTPUT | | | | | | | |
| Output Voltage (Vac) | 220 (±0.5%)/230 (±0.5%) | | | | | | |
| Output Frequency (Hz) | 50/60 (±0.5%) | | | | | | |
| Efficiency | Up to 86% | | | | Up to 88% | | |
| Harmonic Distortion (THDv) | ≤2% (Linear load) | | | | | | |
| Crest Factor | 3:1 (Max) | | | | | | |
| BATTERY | | | | | | | |
| Battery Voltage (Vdc) | 192 | | | | 240 | | |
| SYSTEM FEATURES | | | | | | | |
| Transfer Time (ms) | 0 (Line mode → Battery mode) | | | | | | |
| Overload | 110%≤Load≤150%/1min; >150%/200ms, to Bypass | | | | | | |
| LED Display | Battery low, Mains status, Inverter, Bypass, UPS failure, Overload | | | | | | |
| LCD Display | I/O voltage, Frequency, Battery voltage, Load percentage, Internal temperature | | | | | | |
| Communication Interface | RS232, RS485, EPO, Dry contact, SNMP (Optional) | | | | | | |
| ENVIRONMENTAL | | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | | |
| Storage Temperature (°C) | -25~55 | | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | | |
| Altitude (m) | <1500 | | | | | | |
| Noise Level (dB) | <60 | | | | <65 | | |
| PHYSICAL | | | | | | | |
| Dimension W×D×H (mm) | 305×585×864 | | | | 350×650×1050 | | |
| Net Weight (kg) | 100 | 110 | 115 | 130 | 145 | 205 | 255 |
| Shipping Weight (kg) | 110 | 120 | 125 | 140 | 155 | 220 | 270 |
| STANDARDS | | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | | |
| Performance | IEC/EN 62040-3 | | | | | | |

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High Reliability Design

- ◆ Double Conversion on-line design, which makes the output a pure sine wave source with tracking frequency, phase-lock and voltage regulation, noise suppression, and without power fluctuation interference, providing the load with more comprehensive protection
- ◆ Zero transfer time of output, satisfies high standard power requirements of precision equipment
- ◆ Modular design and dual-CPU control, high reliability and stability ensure the safe operation and high efficiency

Optimization of High-performance Battery

- ◆ Adapt intelligent battery management (ABM) technology, thus it extends battery life and reduces battery maintenance times
- ◆ Advanced CC (Constant current)/CV (Constant voltage) auto-conversion charging technology maximizes the activation of cells, thus it saves the charging time and extending the battery life

Strong Redundancy/Parallel Ability

- ◆ Some units can be directly connected in parallel, increasing the scalability of the system
- ◆ The parallel system can share a group of backup battery
- ◆ Non-fixed Master-Slave relationship: Among several UPS in parallel, the unit startup first is Master UPS, the others are Slave UPS. The master and slave can be exchanged. If the inverter of one UPS fails, the UPS will automatically cut off the output, then the load will be powered by remained UPS

Comprehensive and Reliable Protection

- ◆ Self-diagnosis function before start-up, avoid the risks that maybe lead to the failure
- ◆ The multi-protections such as overload, short-circuit, over-temperature, battery under voltage, battery over-charge and so on greatly ensure the system stability and reliability

High Reliability During Operation

- ◆ Pure online static bypass technology, provides a strong protection against overload and fault
- ◆ Built-in manual maintenance bypass, further improves the reliability of continuous operation

Wide Input Range

- ◆ The range of AC input voltage is $380V \pm 20\%$, thereby it reduces the battery using frequency and greatly extending the battery life
- ◆ Wide input frequency range, ensure all types of fuel generators connected work stable



User-friendly Network Management

- ◆ Chinese and English language selectable via LCD panel
- ◆ RS232 communication interface
- ◆ RS485 communication interface (Support ModBus protocol)
- ◆ SNMP card (Optional)
- ◆ Events log can be record in the LCD panel
- ◆ Dry contact signal port are available

Technical Specifications

| MODEL | EPI 8K | EPI 10K | EPI 15K | EPI 20K | EPI 30K | EPI 40K |
|--------------------------------|--|---------|---------|--------------|---------|---------|
| Capacity (kVA/kW) | 8/6.4 | 10/8 | 15/12 | 20/16 | 3/24 | 40/32 |
| INPUT | | | | | | |
| Operating Voltage Range (Vac) | 380/400 (±20%), (3Ph+N+PE) | | | | | |
| Operating Frequency Range (Hz) | 50/60 (±5%) | | | | | |
| Power Factor | ≥0.97 * | | | | | |
| OUTPUT | | | | | | |
| Output Voltage (Vac) | 220 (±1%) | | | | | |
| Output Frequency (Hz) | 50/60 (±0.5%) | | | | | |
| Crest Factor | 3:1 (Max) | | | | | |
| Efficiency | Up to 86% | | | Up to 88% | | |
| Harmonic Distortion (THDv) | ≤2% (Linear load) | | | | | |
| BATTERY | | | | | | |
| Battery Voltage (Vdc) | 192 | | | 240 | | |
| SYSTEM FEATURES | | | | | | |
| Transfer Time (ms) | 0 (Line mode → Battery mode) | | | | | |
| Overload | 110% ≤Load≤150%/1min; >150%/200ms, to Bypass | | | | | |
| LED Display | Low battery voltage, Mains status, Inverter, Bypass, UPS failure, Overload | | | | | |
| LCD Display | I/O voltage, Frequency, Battery voltage, Load percentage, Internal temperature | | | | | |
| Communication Interface | RS232, RS485, EPO, Dry contact, SNMP (Optional) | | | | | |
| ENVIRONMENTAL | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | |
| Storage Temperature (°C) | -25~55 | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | |
| Altitude (m) | <1500 | | | | | |
| Noise Level (dB) | <60 | | | <65 | | |
| PHYSICAL | | | | | | |
| Dimension W×D×H (mm) | 305×585×864 | | | 350×650×1050 | | |
| Net Weight (kg) | 110 | 115 | 130 | 145 | 205 | 255 |
| Shipping Weight (kg) | 120 | 125 | 140 | 155 | 220 | 270 |
| STANDARDS | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | |
| Performance | IEC/EN 62040-3 | | | | | |

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Online Double Conversion

- ◆ Online Double Conversion design helps to output a pure sine wave, which is immune from the UPS input, so that the load can run steadily
- ◆ UPS transfers among different working mode without output interruption, thereby powering the load uninterruptedly

Full DSP Control

- ◆ Double DSP control makes the whole system more stable and reliable

High Power Factor

- ◆ The output power factor up to 0.9 better matches the load
- ◆ The input power factor 0.97 with filter helps to improve the efficiency, reduce the harmonic pollution to the Grid and lower the UPS running cost

N+X Parallel Redundancy

- ◆ N+X parallel redundant design, up to 6 units available, makes the configuration more flexible
- ◆ Any unit in parallel system fails, the faulty one will automatically cut off the output, and the load will be powered by the remained units
- ◆ It is easy to configure the parallel system just by connecting the parallel cables and doing proper settings
- ◆ Non-fixed Master-Slave relationship: Among several UPS in parallel, the unit startup first is Master UPS, the others are Slave. The master and slave may be exchanged

Wide Input Adaptability

- ◆ The range of AC input voltage is (380/400/415Vac) (-25%/+20%), minimizing transfer to battery mode, thereby greatly prolonging the battery life
- ◆ Wide input frequency ranging from 45Hz to 65Hz, ensures stability of UPS while generator connected



Optimized Battery Management

- ◆ Intelligent battery management system and advanced battery auto float/boost charge technology, reduces the frequency of battery maintenance, greatly improves the battery efficiency and extends battery life
- ◆ Battery discharge time prediction: The system will display the backup time of battery calculated by discharge current and voltage
- ◆ Battery self-test: Battery is automatically tested at regular intervals
- ◆ Flexible battery voltage configuration



Power Walk In

- ◆ Specially designed power walk in function, in which rectifier of each unit in parallel system will be turned on in sequence at intervals to avoid the sudden load on the generator, thereby reducing the cost of the generator required



Generator Mode

- ◆ Set the maximum output power of the generator when a smaller one than needed is employed to extend the battery duration time. In this case, the load is supplied by both the generator and battery



LBS Synchronization

- ◆ Synchronize the output of the two independent UPS systems (Single unit or parallel) even when the two systems are operating on different modes (Bypass/Inverter) or on battery



Multi-protection

- ◆ Self-diagnosis function will take place before start-up for safety
- ◆ Multi-protection: AC input under/over voltage, overload, short-circuit, over-current, over bus voltage, over-temperature, fan failure, auxiliary power failure, battery under voltage, battery over-charge and so on



EPO Function

- ◆ A concave red EPO button with transparent cover is embodied in the LCD control panel for emergency power off



User-friendly Network Management

- ◆ Chinese/English LCD and LED mimic diagram: Real time operation parameters and status (7 inch touch screen optional)
- ◆ RS232 & RS485 communication ports: For local monitor with corresponding software, both can support MODBUS rotocol
- ◆ SNMP adapter (Optional): For remote monitor through network
- ◆ Dry contacts (10-160kVA optional) for additional monitoring:
 - a) UPS on Inverter
 - b) Mains input failure
 - c) Remote EPO
 - d) Battery low voltage alarm
 - e) UPS fault
 - f) UPS alarm
 - g) UPS on battery
 - h) UPS on bypass
 Note : d)--h) optional

Technical Specifications

| MODEL | EP10 | EP20 | EP30 | EP40 | EP60 | EP80 | EP100 | EP120 | EP160 |
|--------------------------------|--|-----------|-----------|--------------|-----------|-------------------|--|--|---|
| Capacity (kVA/KW) | 10/9 | 20/18 | 30/27 | 40/36 | 60/54 | 80/72 | 100/90 | 120/108 | 160/144 |
| INPUT | | | | | | | | | |
| Operating Voltage Range (Vac) | 380/400/415 (-25%/ + 20%), (3Ph + PE) | | | | | | | | |
| Operating Frequency Range (Hz) | 50/60 (±5%) | | | | | | | | |
| Power Factor | ≥0.97 * | | | | | | | | |
| OUTPUT | | | | | | | | | |
| Output Voltage (Vac) | 380/400/415 (±1%), (3Ph+N+PE) | | | | | | | | |
| Output Frequency (Hz) | 50/60 (±0.05%) | | | | | | | | |
| Harmonic Distortion (THDv) | ≤2% (Linear load) | | | | | ≤1% (Linear load) | | | |
| Crest Factor | 3:1 (Max) | | | | | | | | |
| Efficiency | Up to 88% | Up to 89% | Up to 90% | Up to 90.5% | Up to 92% | Up to 92.5% | | | |
| BYPASS | | | | | | | | | |
| Rated Voltage | 380/400/415, (3Ph + N + PE) | | | | | | | | |
| Rated Frequency | 50/60 | | | | | | | | |
| Voltage Protection Range | Upper limit: +20% (+10%, +15%, +20% adjustable) Lower limit: -40% (-10%, -20%, -30%, -40% adjustable) | | | | | | | | |
| Frequency Protection Range | ±10% (±2.5%, ±5%, ±10%, ±20% adjustable) | | | | | | | | |
| BATTERY | | | | | | | | | |
| Battery voltage (Vdc) | 384 (360~384) | | | | | | | | |
| SYSTEM FEATURES | | | | | | | | | |
| Transfer Time (ms) | 0 (Line mode→ Battery mode) | | | | | | | | |
| Overload | Load≤110%/60min; ≤125%/10mins; ≤150%/1 min, to Bypass | | | | | | | | |
| LED Display | Input, Inverter, Bypass, Battery, Output, Status | | | | | | | | |
| LCD Display | I/O voltage, frequency, power, power factor, battery voltage, current, battery status, load percentage, UPS status, history record | | | | | | | | |
| Communication Interface | RS232, RS485, EPO, Dry contact (Optional), SNMP card (Optional) | | | | | | | | |
| Optional | Harmonic filter, SNMP adapter, LBS cables, battery temperature sensor, Bypass current-sharing inductor | | | | | | | | |
| ENVIRONMENTAL | | | | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | | | | |
| Storage Temperature (°C) | -25~55 | | | | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | | | | |
| Altitude (m) | <1500 | | | | | | | | |
| Noise Level (dB) | <58 | | | | | <68 | | | |
| PHYSICAL | | | | | | | | | |
| Dimension W×D×H (mm) | 350×650×1050 | | | 430×830×1100 | | 720×690×1400 | 720×690×1400 (6P) 1515×830×1600 (12P) | 890×790×1600 (6P) 1515×830×1600 (12P) | 890×790×1600 (6P) 1400×1000×1900 (12P) |
| Net Weight (kg) | 145 | 165 | 204 | 255 | 320 | 450 | 556 (6P)/1300 (12P) | 693 (6P)/1450 (12P) | 780 (6P)/1645 (12P) |
| Shipping Weight (kg) | 160 | 180 | 225 | 280 | 345 | 485 | 591 (6P)/1370 (12P) | 738 (6P)/1520 (12P) | 825 (6P)/1775 (12P) |
| STANDARDS | | | | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | | | | |
| Performance | IEC/EN 62040-3 | | | | | | | | |

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Technical Specifications

| MODEL | EP200 | EP300 | EP400 | EP500-12P | EP600-12P | EP800-12P |
|--------------------------------|--|---|----------------------|----------------|----------------|----------------|
| Capacity (kVA/KW) | 200/180 | 300/270 | 400/360 | 500/450 | 600/540 | 800/720 |
| INPUT | | | | | | |
| Operating Voltage Range (Vac) | 380/400/415 (-25%/+20%), (3Ph+PE) | | | | | |
| Operating Frequency Range (Hz) | 50/60 (±5%) | | | | | |
| Power Factor | ≥0.97 * | | | | | |
| OUTPUT | | | | | | |
| Output Voltage (Vac) | 380/400/415 (±1%), (3Ph+N+PE) | | | | | |
| Output Frequency (Hz) | 50/60 (±0.05%) | | | | | |
| Harmonic Distortion (THDv) | ≤1% (Linear load) | | | | | |
| Crest Factor | 3:1 (Max) | | | | | |
| Efficiency | Up to 92.5% | Up to 93% | | Up to 93.5% | | Up to 94% |
| BYPASS | | | | | | |
| Rated Voltage (Vac) | 380/400/415, (3Ph+N+PE) | | | | | |
| Rated Frequency (Hz) | 50/60 | | | | | |
| Voltage Protection Range | Upper limit: +20% (+10%, +15%, +20% adjustable) Lower limit: -40% (-10%, -20%, -30%, -40% adjustable) | | | | | |
| Frequency Protection Range | ±10% (±2.5%, ±5%, ±10%, ±20% adjustable) | | | | | |
| BATTERY | | | | | | |
| Battery Voltage (Vdc) | 384 (360~408) | | | 480 | 600 | |
| SYSTEM FEATURES | | | | | | |
| Transfer Time (ms) | 0 (Line mode → Battery mode) | | | | | |
| Overload | Load≤110%/60min; ≤125%/10mins; ≤150%/1 min, to Bypass | | | | | |
| LED Display | Input, Inverter, Bypass, Battery, Output, Status | | | | | |
| LCD Display | I/O voltage, frequency, power, power factor, battery voltage, current, battery status, load percentage, UPS status, history record, settings | | | | | |
| Communication Interface | RS232, RS485, EPO, Dry contact, SNMP card (Optional) | | | | | |
| Optional | Harmonic filter, SNMP adapter, LBS cables, battery temperature sensor, Bypass current-sharing inductor | | | | | |
| ENVIRONMENTAL | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | |
| Storage Temperature (°C) | -25~55 | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | |
| Altitude (m) | <1500 | | | | | |
| Noise Level (dB) | <72 | | | <75 | | |
| PHYSICAL | | | | | | |
| Dimension W×D×H (mm) | 1200×800×1600 (6P) 1400×1000×1900 (12P) | 1400×1000×1900 (6P) 1640×1000×1900 (12P) | | 2580×1000×1900 | 2800×1040×1900 | 3280×1040×1900 |
| Net Weight (kg) | 1030 (6P)/1715 (12P) | 1560 (6P)/2395 (12P) | 1640 (6P)/2510 (12P) | 3510 | 3950 | 4950 |
| Shipping Weight (kg) | 1130 (6P)/1845 (12P) | 1690 (6P)/2545 (12P) | 1770 (6P)/2665 (12P) | 3730 | 4250 | 5245 |
| STANDARDS | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | |
| Performance | IEC/EN 62040-3 | | | | | |

* With optional filter

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Online Double Conversion

- ◆ Online Double Conversion design helps to output a pure sine wave, which is immune from the UPS input, so that the load can run steadily
- ◆ UPS transfers among different working mode without output interruption, thereby powering the load uninterruptedly

Wide Input Range

- ◆ The range of AC input voltage is (380/400/415Vac) (-25%/+20%), minimizing transfer to battery mode, thereby greatly prolonging the battery life
- ◆ Wide input frequency ranging from 45Hz to 65Hz, ensures stability of UPS while generator connected

Optimized Battery Management

- ◆ Intelligent battery management system and advanced battery auto float/boost charge technology, reduces the frequency of battery maintenance, greatly improves the battery efficiency and extends battery life
- ◆ Battery self-test: Battery is automatically tested at regular intervals
- ◆ Flexible battery configuration ranging from 360-384Vdc

Full DSP Control

- ◆ Double DSP control makes the whole system more stable and reliable

Power Walk In

- ◆ Specially designed power walk in function, in which rectifier of each unit in parallel system will be turned on in sequence at intervals to avoid the sudden load on the generator, thereby reducing the cost of the generator required

Generator Mode

- ◆ Set the maximum output power of the generator when a smaller one than needed is employed to extend the battery duration time. In this case, the load is supplied by both the generator and battery

LBS Synchronization

- ◆ Synchronize the output of the two independent UPS systems (Single unit or parallel) even when the two systems are operating on different modes (Bypass/Inverter) or on battery

Multi-protection

- ◆ Self-diagnosis function will take place before start-up for safety
- ◆ Multi-protection: AC input under/over voltage, overload, short-circuit, over-current, over bus voltage, over-temperature, fan failure, auxiliary power failure, battery under voltage, battery over-charge and so on

N+X Parallel Redundancy

- N+X parallel redundant design, up to 6 units available, makes the configuration more flexible
Any unit in parallel system fails, the faulty one will automatically cut off the output, and the load will be powered by the remained units
- It is easy to configure the parallel system just by connecting the parallel cables and doing proper settings
- Non-fixed Master-Slave relationship: Among several UPS in parallel, the unit startup first is Master UPS, the others are Slave. The master and slave may be exchanged



User-friendly Network Management

- Chinese/English LCD and LED mimic diagram: real time operation parameters and status (7 inch touch screen optional)
- RS232 & RS485 communication ports: For local monitor with corresponding software, both can support MODBUS protocol
- SNMP adapter (Optional): For remote monitor through network
- Dry contacts (Optional): For additional monitoring

Technical Specifications

| MODEL | EP10-L | EP20-L | EP30-L | EP40-L | EP60-L | EP80-L | EP100-L | EP120-L | EP160-L | |
|--------------------------------|--|-----------|-----------|--------------|-----------|--------------|-------------|--------------|-------------|--|
| Capacity (kVA/kW) | 10/8 | 20/16 | 30/24 | 40/32 | 60/48 | 80/64 | 100/80 | 120/96 | 160/128 | |
| INPUT | | | | | | | | | | |
| Operating Voltage Range (Vac) | 380/400/415Vac (-25%/ +20%), (3Ph + PE) | | | | | | | | | |
| Operating Frequency Range (Hz) | 50/60Hz (±5%) | | | | | | | | | |
| Power factor | ≥0.97 * | | | | | | | | | |
| OUTPUT | | | | | | | | | | |
| Output Voltage (Vac) | 380/400/415Vac (±1%), (3Ph + N + PE) | | | | | | | | | |
| Output Frequency (Hz) | 50/60Hz (±0.05%) | | | | | | | | | |
| Harmonic Distortion (THDv) | ≤2% (Linear load) | | | | | | | | | |
| Crest Factor | 3:1 (Max) | | | | | | | | | |
| Efficiency | Up to 88% | Up to 89% | Up to 90% | Up to 90.5% | Up to 92% | Up to 92% | Up to 92.5% | Up to 92.5% | Up to 92.5% | |
| BYPASS | | | | | | | | | | |
| Rated Voltage (Vac) | 380/400/415Vac, (3Ph + N + PE) | | | | | | | | | |
| Rated Frequency (Hz) | 50/60Hz | | | | | | | | | |
| Voltage Protection Range | Upper limit: +20% (+10%, +15%, +20% adjustable) Lower limit: -40% (-10%, -20%, -30%, -40% adjustable) | | | | | | | | | |
| Frequency Protection Range | ±10% (±2.5%, ±5%, ±10%, ±20% adjustable) | | | | | | | | | |
| BATTERY | | | | | | | | | | |
| Battery Voltage (Vdc) | 384Vdc (360~384Vdc) | | | | | | | | | |
| SYSTEM FEATURES | | | | | | | | | | |
| Transfer Time (ms) | 0 ms (Line mode → Battery mode) | | | | | | | | | |
| Overload | Load≤110%/60min; ≤125%/10mins; ≤150%/1 min, to Bypass | | | | | | | | | |
| LED Display | Input, Inverter, Bypass, Battery, Output, Status | | | | | | | | | |
| LCD Display | I/O voltage, frequency, power, power factor, battery voltage, current, battery status, load percentage, UPS status, history record, settings | | | | | | | | | |
| Communication Interface | RS232, RS485, EPO, Dry contact (Optional), SNMP card (Optional) | | | | | | | | | |
| Optional | Harmonic filter, SNMP adapter, LBS cables, battery temperature sensor, Bypass current-sharing inductor | | | | | | | | | |
| ENVIRONMENTAL | | | | | | | | | | |
| Operating Temperature (mm) | 0~40°C | | | | | | | | | |
| Storage Temperature (mm) | -25~55°C | | | | | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | | | | | |
| Altitude (mm) | <1500m | | | | | | | | | |
| Noise Level (mm) | <58dB | | | | <68dB | | | | | |
| PHYSICAL | | | | | | | | | | |
| Dimension W×D×H (mm) | 350×650×1050 | | | 430×830×1100 | | 720×690×1400 | | 890×790×1600 | | |
| Net weight (kg) | 145 | 155 | 190 | 242 | 315 | 365 | 420 | 635 | 740 | |
| Shipping weight (kg) | 160 | 170 | 215 | 267 | 340 | 400 | 455 | 680 | 785 | |
| STANDARDS | | | | | | | | | | |
| Safety | IEC/EN 62040-1; IEC 62477-1 | | | | | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2) | | | | | | | | | |
| Performance | IEC/EN 62040-3 | | | | | | | | | |

* With optional filter

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Operating Mode

- ◆ Adopt IGBT rectifier/inverter technology, output inverter isolation transformer, double-conversion online design, zero transfer time.

Full DSP Control

- ◆ Double DSP control makes the whole system more stable and reliable

Strong Environmental Adaptability

- ◆ Conformal coating, wide mains input range: 346~456vac, 45-65Hz, can work stably with various fuel generator.

Optimized Battery Management

- ◆ Intelligent battery management system, extend battery life; Auto float/boost charge technology, activates the battery maximally; Temperature compensation, discharging time prediction, timed self-testing function, etc.

N+X Parallel Redundancy

- ◆ N+X parallel redundancy design, up to 6 units available, two sets of UPS parallel current sharing less than 3%.

Smart and Friendly Human-machine Interface

- ◆ Standard 7-inch touch screen, displays the running status, working parameters and historical records of the machine; Chinese/English display; Intuitive LED flow chart.

Generator Mode

- ◆ Set the maximum output power of the generator when a smaller one than needed is employed to extend the battery duration time. In this case, the load is supplied by both the generator and battery

Multi-protection

- ◆ Self-diagnosis when startup, AC input over/under voltage, overcurrent, bus overvoltage, overheat, output overload, short-circuit, auxiliary power failure, battery undervoltage early warning and battery overcharge etc., make sure the system's stable and reliable operation.

EPO Function

- ◆ EPO emergency power off function.

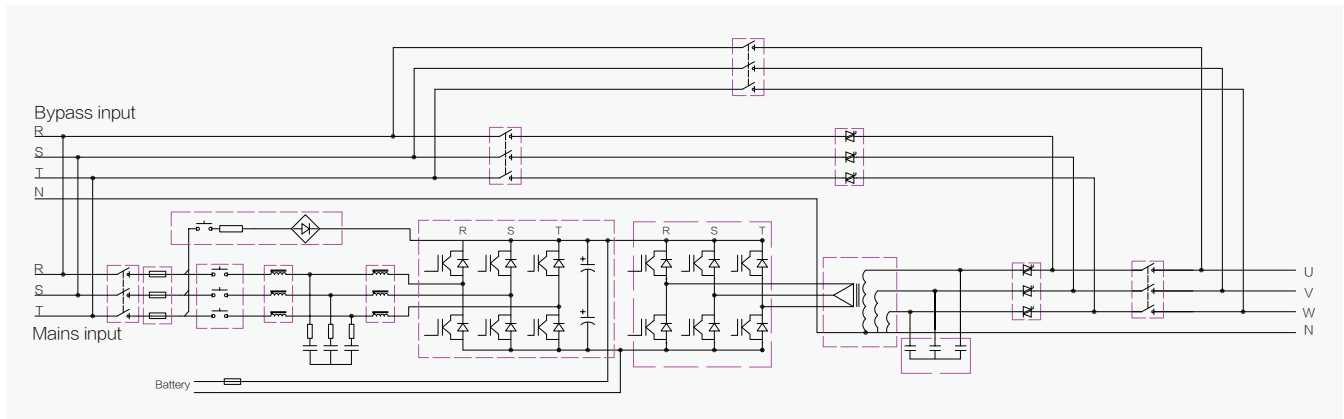
Manual Maintenance Bypass Design

- ◆ Maintenance bypass passage, holds the power supply when maintenance.

Communication Port

- ◆ USB, RS485 (MODBUS), SNMP adapter (Optional), 6 dry contacts (Optional)

Topological Schematic



Technical Specifications

| MODEL | EP10-H | EP20-H | EP30-H | EP40-H | EP60-H | EP80-H | EP100-H | EP120-H | EP160-H |
|---------------------------------|--|-----------|-----------|--------------|-----------|------------------------|---------------|---------|---------|
| Capacity (kVA/kW) | 10/9 | 20/18 | 30/27 | 40/36 | 60/54 | 80/72 | 100/90 | 120/108 | 160/144 |
| INPUT | | | | | | | | | |
| Nominal Voltage & Range (Vac) | 380/400/415 (346~456), (3Ph+PE, without N) | | | | | | | | |
| Frequency & Range (Hz) | 50/60 (45~65) | | | | | | | | |
| Power Factor | ≥0.99 | | | | | | | | |
| Harmonic Distortion (THDi) | ≤3% | | | | | | | | |
| Power Walk-in | 0-200s (Settable) | | | | | | | | |
| BYPASS INPUT | | | | | | | | | |
| Voltage (Vac) | 380/400/415, (3Ph+N+PE) | | | | | | | | |
| Frequency Tolerance (Hz) | ±2 (0.5, 1, 2, 3 settable) | | | | | | | | |
| ECO Mode | Support | | | | | | | | |
| OUTPUT | | | | | | | | | |
| Voltage (Vac) | 380/400/415 (±1%), (3Ph+N+PE) | | | | | | | | |
| Frequency (Hz) | 50/60 (±0.05%) | | | | | | | | |
| Voltage Regulation | ≤1% | | | | | | | | |
| Waveform | Pure Sinewave | | | | | | | | |
| Harmonic Distortion (THDv) | ≤2% (100% Linear load) | | | | | ≤1% (100% Linear load) | | | |
| Frequency Tracking Speed (Hz/s) | 0.5-2 settable; 2 when paralleling | | | | | | | | |
| Bypass Transfer Time (ms) | 0 (Inverter and bypass in synchronization) <15 (Inverter and bypass out of synchronization) | | | | | | | | |
| Battery Transfer Time (ms) | 0 | | | | | | | | |
| Efficiency (Max.) | Up to 88% | Up to 89% | Up to 90% | Up to 90.5% | Up to 92% | Up to 92.5% | | | |
| Overload | 105%~110%, last 60min; 110%~125%, last 10min; 125%~150%, last 1min | | | | | | | | |
| BATTERY | | | | | | | | | |
| Battery Voltage (Vdc) | 600 | | | | | | | | |
| ENVIRONMENTAL | | | | | | | | | |
| Operating Temperature (°C) | 0~40 | | | | | | | | |
| Storage Temperature (°C) | -25~55 (No battery) | | | | | | | | |
| Humidity Range | 0~95% (Non-condensing) | | | | | | | | |
| Altitude (m) | <1500 | | | | | | | | |
| Noise level (dB) | <58 | | | | <68 | | | | |
| OTHERS | | | | | | | | | |
| Alarm Function | Output overload, utility abnormal, DC (Battery)low, UPS fault alarm & history, etc | | | | | | | | |
| Protection Function | Short circuit, overload, over temperature, DC (Battery) low, output low voltage, fan fault alarm (Optional) | | | | | | | | |
| Communication Function | USB, RS485, EPO, dry contact (Optional), SNMP card (Optional) | | | | | | | | |
| Optional Accessory | SNMP adapter, battery temperature sensor, bypass current-sharing inductor | | | | | | | | |
| PHYSICAL | | | | | | | | | |
| Dimension W×D×H (mm) | 720×690×1400 | | | 890×775×1600 | | | 1200×800×1600 | | |
| Net Weight (kg) | 270 | 300 | 340 | 365 | 555 | 625 | 710 | 925 | 1065 |
| Shipping Weight (kg) | 300 | 335 | 375 | 400 | 600 | 670 | 755 | 995 | 1135 |
| STANDARDS | | | | | | | | | |
| Safety | IEC/EN 62040-1; IEC/EN 62477-1 | | | | | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-2-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11) | | | | | | | | |

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Technical Specifications

| MODEL | EP200-H | EP300-H | EP400-H | EP500-H | EP600-H |
|---------------------------------|--|----------------|---------|----------------|---------|
| Capacity (kVA/kW) | 200/180 | 300/270 | 400/360 | 500/450 | 600/540 |
| INPUT | | | | | |
| Nominal Voltage & Range (Vac) | 380/400/415 (346~456), (3Ph+PE, without N) | | | | |
| Frequency & Range (Hz) | 50/60 (45~65) | | | | |
| Power Factor | ≥0.99 | | | | |
| Harmonic Distortion (THDi) | ≤3% | | | | |
| Power Walk-in | 0-200s (Settable) | | | | |
| BYPASS INPUT | | | | | |
| Voltage (Vac) | 380/400/415, (3Ph+N+PE) | | | | |
| Frequency Tolerance (Hz) | ±2 (0.5, 1, 2, 3 settable) | | | | |
| ECO Mode | Support | | | | |
| OUTPUT | | | | | |
| Voltage (Vac) | 380/400/415 (±1%), (3Ph+N+PE) | | | | |
| Frequency (Hz) | 50/60 (0.05%) | | | | |
| Voltage Regulation | ≤1% | | | | |
| Waveform | Pure Sinewave | | | | |
| Harmonic Distortion (THDv) | ≤2% (100% Linear load) | | | | |
| Frequency Tracking Speed (Hz/s) | 0.5-2Hz/s settable; 2Hz/s when paralleling | | | | |
| Bypass Transfer Time (ms) | 0 (Inverter and bypass in synchronization) <15 (Inverter and bypass out of synchronization) | | | | |
| Battery Transfer Time (ms) | 0 | | | | |
| Efficiency (Max.) | Up to 92.5% | Up to 93% | | Up to 93.5% | |
| Overload | 105%~110%, last 60min; 110%~125%, last 10min; 125%~150%, last 1min | | | | |
| BATTERY | | | | | |
| Battery Voltage (Vdc) | 600 | | | | |
| ENVIRONMENTAL | | | | | |
| Operating Temperature (°C) | 0~40 | | | | |
| Storage Temperature (°C) | -20~55 (No battery) | | | | |
| Humidity Range | 20~95% (Non-condensing) | | | | |
| Altitude (m) | <1500 | | | | |
| Noise Level (dB) | <70 | | | <75 | |
| OTHERS | | | | | |
| Alarm Function | Output overload, utility abnormal, DC (Battery)low, UPS fault alarm & history, etc | | | | |
| Protection Function | Short circuit, overload, over temperature, DC (Battery) low, output low voltage, fan fault alarm (Optional) | | | | |
| Communication Function | USB, RS485, EPO, dry contact (Optional), SNMP card (Optional) | | | | |
| Optional Accessory | SNMP adapter, battery temperature sensor, bypass current-sharing inductor | | | | |
| PHYSICAL | | | | | |
| Dimension W×D×H (mm) | 1200×800×1600 | 1400×1000×1900 | | 2580×1000×1900 | |
| Net weight (kg) | 1260 | 1650 | 2150 | 2800 | 2960 |
| Shipping weight (kg) | 1330 | 1750 | 2250 | 3040 | 3190 |
| STANDARDS | | | | | |
| Safety | IEC/EN 62040-1; IEC/EN 62477-1 | | | | |
| EMC | IEC/EN 62040-2 (IEC 61000-2-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11) | | | | |

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Our Solution

UPS Solution Transformer-less Memopower Series

1~40kVA



UPS Solution Transformer-less HPM3300E Series

30~1200kVA



UPS Solution Robust Transformer-based UPS Series

1~800kVA



Precision Cooling Series

5~300kW



Data Center Integrated Solution

IDU/IDM/IDB/IOU Series



Lead-acid Battery Series

3.5~250Ah (12V)
200~3000Ah (2V)



UPS Solution Line Interactive UPS Series

0.4~3kVA



UPS Solution Transformer-less YDC3300 Series

10~200kVA



UPS Solution Transformer-less UL Products Series

1~100kVA



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Add: Kstar Industrial Park, Fuyuan Industrial Zone, Guanlan, Shenzhen

Add: CATL-KSTAR Science and Technology Co., Ltd.

Add: Jiangxi Changxin Golden Sunshine Power Co., Ltd.

Add: Jiangsu Kstar Energy Technology Co., Ltd.

Add: KSTAR (Vietnam) Co., Ltd.