



شركة إلكترونيات الطاقة العربية
Arabian Power Electronics Company

Built to Last...

SINEGATE Series

INDUSTRIAL UPS SYSTEMS

SINGLE PHASE



Applications

Oil & Gas – Onshore and Offshore Facilities | Refineries | Petrochemicals | Transportation
Power Generation | Transmission & Distribution | Manufacturing | Mining Industries

SINEGATE Series

Single Phase
5 kVA - 120 kVA

SINEGATE Series is a robust industrial-grade Uninterruptible Power Supply (UPS) system, which is a true online, double conversion UPS designed and built in accordance with IEC standards.

SINEGATE Series incorporates advanced system topology to optimize the system reliability, efficiency and the overall system performance. It features PWM inverter technology, fully rated static transfer switch and high overload and fault clearing capabilities. The UPS system is carefully engineered and built to last and operate flawlessly in the harshest operating conditions for more than 20 years with the minimum requirement of maintenance.

KEY DESIGN FEATURES

State-of-the-art Technology

SINEGATE Series UPS systems incorporate IGBT-based PWM technology to reduce harmonic distortion and increase both crest factor tolerance and dynamic stability.

Effective Thermal Management

It is designed with a unique spot cooling thermal management design that qualifies the system to satisfactorily operate at ambient temperature more than 45°C.

High Reliability

SINEGATE Series UPS systems are designed for high reliability as components are selected with high de-rating factor to assure maximum MTBF.

Long Design Life

Components are carefully selected to provide system that operate at extreme ambient conditions with life expectancy in excess of 20 years.

Durability

Enclosures are industrial grade that are made of firmly welded heavy-gauge steel with an attractive, long-lasting powder textured coating (RAL 7032). Standard cabinets are NEMA 1 (IP 20). Other protection classes and colors are available upon request.

Ease of Access

All components are front accessible; no side or back clearance is required. Internal components and connections are easily accessible and/or removable through the front door.

Ease of Maintenance

Most power and control modules are provided in sub-assembled chassis with plug and socket connection for easy serviceability and minimized spare part inventory.

Low MTTR

Due to the ease of access to internal components and the plug-and-socket subassemblies in addition to the availability of self-diagnostic PCB, SINEGATE is accredited for exceptionally low mean time to repair (MTTR).

Ease of Installation

Cabinets are floor mountable with bottom entry for cable or conduit entrance. Input, output and remote alarm connections are wired to internal terminal lugs that are easily accessible. Top entry is available upon request.

Dynamic Load Sharing Parallel Operation

SINEGATE Series UPS is featured with dynamic load sharing capability to ensure load is equally shared between parallel UPS units.

Ease of Adjustment

Output voltage, DC float voltage, equalize voltage, current limits and alarm levels are easily adjustable.

Remote Status Panel

As an optional feature, a redundant front panel can be wired to provide status of the UPS in a remote location.

IEC Compliant

SINEGATE Series UPS is designed and tested in accordance with IEC standards.



Single Phase

5 kVA - 120 kVA

STANDARD FEATURES

- Input Circuit Breaker (14 kAIC)
- Battery Circuit Breaker (10 kAIC)
- Bypass Circuit Breaker (14 kAIC)
- Metering:
 - Input Voltage
 - DC Link Voltage
 - Battery Current
 - Battery State Of Charge (SOC) Percentage
 - Output Voltage
 - Output Current
 - Bypass Input Voltage
 - Output Frequency
- Battery Current Limit Adjustment
- Float and Equalize Voltage Adjustment
- Manual Float/Equalize Switch
- Latching Alarms with Reset
- Event Log
- Lifting Eyebolt

OPTIONAL FEATURES

- Input Circuit Breaker (65 kAIC)
- Battery Circuit Breaker (20 kAIC)
- Bypass Circuit Breaker (65 kAIC)
- Output Circuit Breaker (65 kAIC)
- Inverter Output Circuit Breaker (Non-Automatic)
- Metering: *
 - Input Frequency
 - Input Current
 - Output Load Percentage
 - Output kVA
 - Output kW
 - Output Power Factor
 - Ground Fault meter
- Twelve-Pulse Rectifier Design
- Potential-free Relay/Alarm Contacts
- Lamp Test Pushbutton
- Audible Alarm with Silencing Pushbutton
- Reverse Polarity Protection
- Ground Fault Alarm
- Blocking Diode for Common Battery
- Temperature-compensated Charging Facility
- Equalize Inhibit via Remote Signal
- Space Heater with Thermostat
- SNMP Compatible
- Remote Web Monitoring
- RS-232/485/MODBUS/USB

* Analog metering available on request

PRODUCT SPECIFICATIONS

AC Input (Rectifier)

Voltage	208, 380, 400, 415 or 480 VAC
Input Voltage Variation	±10% (up to ±20% on request)
Input Frequency	60 Hz or 50 Hz
Input Frequency Variation	±5%
Current Walk-in Ramp	0-100% over > 10 sec
Rectifier Current Limit	100% of full load input current (Optional up to 115%)
Reflected Harmonics	8% THDI typical (12 Pulse)

DC Link

Voltage	120, 240, 360 VDC
DC Voltage Regulation	Float: ±1%
	Equalize: ±1%
Ripple Voltage	2% Vrms max (1% on request)

AC Output (Inverter)

kVA Ratings	5 kVA – 120 kVA
Voltage Ratings	110, 120, 220, 230 or 240 VAC
Voltage Regulation (Steady State)	±1%
Voltage Adjustment Range	±5%
Frequency	60 Hz or 50 Hz
Frequency Regulation	±0.1% (free running)
Frequency Synchronization Range	2 Hz
Overload Capacity	125% of full load current for 10 minutes 150% of full load current for 10 sec (up to 1 minute upon request) 200% of full load current for 100 msec.
AC-AC Efficiency	85-89% (peak) at full load
Transient Response	<±5% at 100% load step
Response Time	<3 cycles to reach within ±2%
Total Harmonic Distortion	<2% THDV with linear loads
Load Crest Factor	3:1

Static Transfer Switch

Transfer Time	< ¼ Cycle
kVA Rating	125% of UPS rating for continuous operation
Overload Capacity	150% of UPS rating for 1 minute 200% of UPS rating for 1 second 1000% of UPS rating for 100 msec.

Manual Bypass Switch

Mounting	Inside UPS cubicle (External Switch on request)
Positions	Two (Three positions on request)
Construction	Electromechanical Rotary Type
Transfer scheme	Make-Before-Break
Overload Capacity	125% Continuous 150% 10 minute 200% 1 minute 1000% 10 msec

Indications and Alarms

Standard

Mains On	Mains Abnormal
Inverter On	Low Battery Warning
Float Mode	Load on Inverter
Equalize Mode	Load on Static Bypass
Inverter Overload	Load on Manual Bypass
Inverter Output Over/Undervoltage	DC Over/Undervoltage
Overtemperature	



PRODUCT SPECIFICATIONS (Cont...)

Indications and Alarms (Optional)

Fan Failure	Battery Breaker Open
Out of Sync	
Bypass Line Failure	

Protections

Input Undervoltage	Input Overvoltage
Phase Failure	Output Overload
SOA* Protection for IGBTs	Inverter Output Undervoltage
Inverter Output Overvoltage	Surge Protection Circuits

* Safe Operating Area

Mechanical

Cabinet Protection	IP 20/NEMA 1, (Optional up to IP 54)
Cable Entry	Bottom, (Top entry on request)
Mounting	Floor Mounting
Coating	RAL 7032, Powder Textured Coating (Other colors on request)
Access	Front Access

Environmental

Operating Ambient Temperature	0°C to 45°C (50°C optional)
Storage Temperature	-20°C to 65°C
Operating Altitude	Up to 1000 meter without derating
Relative Humidity	95% non-condensing
Audible Noise	<65 dBA at 1 meter
Ventilation	Forced air cooling



MODEL SPECIFICATIONS

Single Phase UPS Systems

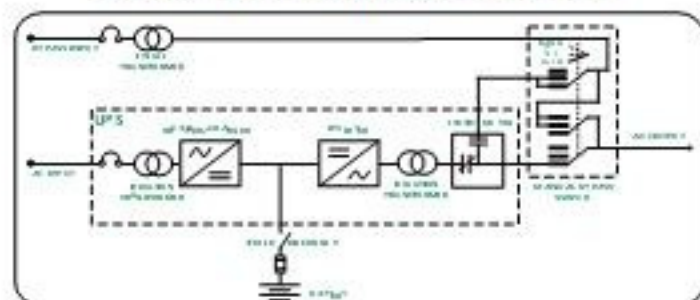
Model Number	Capacity (kVA)	Capacity (kW)	AC Input Current/Phase			DC Link Voltage	DC Current @ L 75V PC	AC Output Current			Cabinet Size (HxWxD)mm	Weight (kg)	Heat Loss (Watts)
			230V/3P	380V/3P	480V/3P			120V	220V	240V			
S31005	5	4	24	13	10	120	44	42	23	21	1200x800x700	247	950
S31007	7.5	6	36	19	15	120	66	63	34	31	1600x800x700	340	1945
S31010	10	8	48	25	20	240	44	83	46	42	2000x1000x700	390	1975
S31015	15	12	69	37	29	240	66	125	68	63	2000x1000x700	480	2951
S31020	20	16	90	48	40	360	57	167	91	83	2000x1000x700	540	3753
S31030	30	24	132	71	57	360	86	250	136	125	2000x1200x700	690	4851
S31040	40	32	171	96	75	360	115	333	182	167	2000x1400x700	790	6220
S31060	60	48	272	149	118	360	171	500	273	250	2000x1600x900	890	9216
S31080	80	64	351	190	151	360	229	667	364	333	2000x1600x900	1080	12350
S31100	100	80	440	231	182	360	285	833	484	417	2000x1800x900	1320	15433
S31120	120	100	565	295	225	360	342	1000	545	500	2000x1800x900	1540	18521

Note: For other voltage ratings contact factory

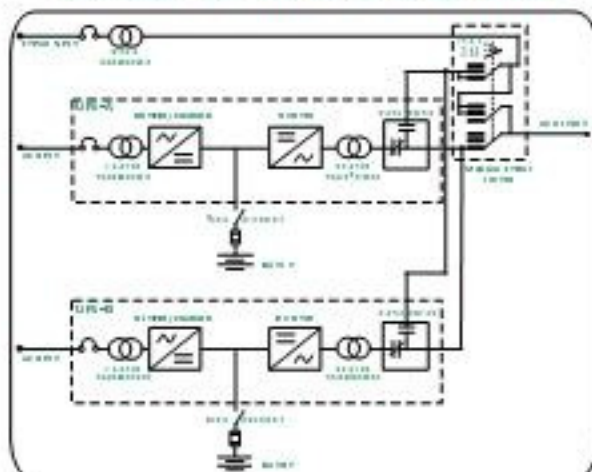
MODEL SELECTION (S-X-Y-ZZZ)

- ▶ S - SINEGATE Series
- ▶ X - Input Phase (1-1P, 3-3P)
- ▶ Y - Output Phase (1-1P, 3-3P)
- ▶ ZZZ - kVA Rating

SINEGATE STANDALONE CONFIGURATION



PARALLEL REDUNDANT CONFIGURATION



Note: ** Specifications are subject to change without prior notice