



# CRYSTAL SERIES



**ON-LINE**  
**1-PHASE INPUT**  
**1-PHASE OUTPUT**



## General Features

- High-frequency and double-conversion online technology
- Wide input voltage range
- Advanced PFC technology (Power Factor Correction)
- Very low total harmonic distortion (THD)
- Self-testing capability at startup
- Advanced battery management (ABM)
- Cold start feature (with fully charged batteries)
- Battery charging while UPS is off
- Lightning and surge protection feature
- Intelligent fan management based on load
- Additional backup time with batteries (optional)
- Short circuit and overload protection
- EMI/RFI noise filter
- RS232 (SNMP optional)
- Shutdown & Restart capability through software

## Control, Protection, and Communication

- High-temperature protection
- Fan test protection
- Protection against AC, L and N incorrect connections
- Output short circuit protection
- Silent operation; cold start; AC resart, automatic restart
- RS232, SNMP card, USB

Model	JCL 1000	JCL 2000	JCL 3000	JCL 6000	JCL 10000
Power (kva)	1 kVA	2 kVA	3 kVA	6 kVA	10 kVA
Nominal voltage	220V				
Frequency	50Hz/60Hz(oto)				
Input voltage range	110 ~ 300 VAC(half load). 140-300VAC (full load)				
Input frequency range	45-55 Hz ± 0,5% 50 Hz 55-65 Hz ± 0,5% 60 Hz				
Phase	Monophase + N + GND				
Power factor	≥0.98		≥0.99		
Input current (full load)	4.0A	8.1A	12.1A	24.2A	40.4A
THD	<5%				
Bypass voltage range	186VAC-252VAC				
<b>Output</b>					
Nominal voltage	Adjustacle from LCD/208VAC/220VAC/230VAC/240VAC				
Power factor	0,8				
Valtoge range	±2%				
Dc Voltage	≤1 Hz/s				
Crest Factor	3:01				
<b>Frequency</b>					
Ac Mode	Same as input frequency				
Battery mode	50/60±0.2Hz				
Paheze lock speed	≤1 Hz/s				
Waveform	100 % lineer load <3%; 100%; no llineer load <5%				
<b>Transfer Time</b>					
Grid to battery mode transition time	0ms				
Battery to grid mode transition time	0ms				
Grid to bypass mode transition time	≤4ms				
Bypass to grid mode transition time	≤4ms				
Normal operation mode to ECO mode transition time	≤10ms				
Sytem Full load efficiency	%90		%92		
ECO Mode efficiency	%94				
Inverter overload capacity	105%~150% 30s Alarm during bypass mode transition >150% 300ms Alarm during bypass mode transition				
<b>Battery</b>					
Battery type	Maintenance-Free Lead Acid Battery				
DC Voltage	24D VC	48V DC	72V DC	168V DC	168V DC
Battery quantitiy	7AH/12V	7AH/12V	7AH/12V	9AH/12V	9AH/12V
Charging	2	4	6	14	14
<b>Charge</b>					
Output voltage	27.5±0.4V	55±0.6V	82.5±0.9V	193.7±0.9V	193.7±0.9V
Charging method	3-Stage Charging				
Recharge time	90% capacity reached after 5 hours of charging Battery (for models with additional charger)				
Input voltage range	80VAC~300VAC				
Charging current	Standard Model:1A Model with Additional Charger: 6A (can be increased up to 12A)				
<b>Software Features</b>					
Status Analysis:	UPS on/off, UPS operating status, data information history				
Display	LCD/LED				
<b>Environmental Conditions For System Operation</b>					
Operating environment	Operating temperature	0~40°C			
	Storage temperature	-25°C~55°C			
	Humidity	20~90% (non-condensing)			
	altitude	0m<altitude<1500m, above 15000m			
Noise	Reduced power	<50db (1-3 kva)			
		<55db(6-10 kva)			
Dimensions		357x144x21	439x190x34	439x190x34	515x262x455 (model with additional charger)
		5	1	1	574x262x710 (standard model)
Weight	Model with additional charger	6	12	12.5	42
	Standard Model	10	20	24	52



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