

Crystal Series

CL1000~CL3000

1000VA~3000VA, 1:1 phase PF. 0.9



Control Panel



Telecom



POS



Banking



Server



Network



Security

FEATURES

- Online Double Conversion UPS
- High power density.
- Output power factor up to 0.9.
- Three stage charging mode extends battery life, optimizes recharging time.
- Selectable high efficiency mode of operation.
- Cold start.
- Standard communication options: RS232 communication port, USB communication port, and relay output contacts or SNMP card.
- Power shedding function may turn off uncritical load in battery backup to make longer backup time for critical load.
- Extended runtime with up to four extended batteries modules (EBPs) per UPS.
- Emergency shutdown control through the remote emergency power-off (EPO).
- Versatile LCD human-computer interface.
- Operating Flexibility
- Runtime expandability
- High level of UPS reliability (total microprocessor control)
- Simplified installation
- Low Noise Level

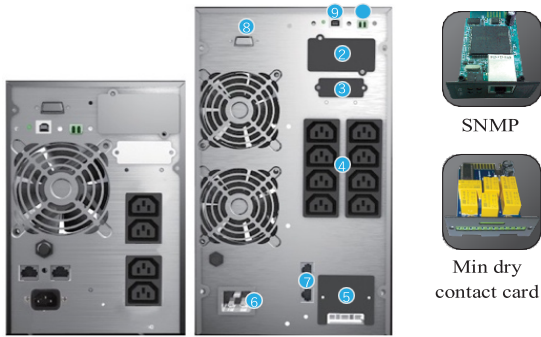
APPLICATIONS

- DATACENTER
- DIGITAL LIVING
- E-MEDICAL
- EMETGENCY
- INDUSTRY
- TRANSPORT
- IT, PC, SERVERS AND NETWORKS
- STORAGE SYSTEM
- CCTV EQUIPMENT
- SECURITY CONTROL & ACCESS
- PBX & VoIP. TELEPHONY
- SWITCHES & HUBS



External Battery Cabinet





- 1-EPO port
- 2- Intelligent slot for SNMP card, dry contact card etc
- 3- External battery cabinet connector
- 4- Output slots including two segments
- 5- Output terminals
- 6- Input Slot
- 7- RJ45 Surg Suppress
- 8- RS232 port
- 9- USB port

EMERGENCY FUNCTION

This configuration ensures the operation of emergency systems that must be supplied in the event of a mains power failure, such as emergency lighting, fire detection/extinguishing systems and alarms. When the mains power supply fails, the inverter begins powering the loads with a progressive start up (Soft Start) in order to prevent overload. Crystal Series is compliant for installation in medium-voltage transformer rooms in accordance with applicable legislation, for the power supply with reserve charge of medium-voltage coils.

RUNTIME EXPANDABILITY

Optional battery extension packs can be connected to increase UPS runtime. In addition the Crystal Series range includes ER versions with no internal batteries and

REDUCED MANAGEMENT COSTS

The UPS is highly flexible and easy to configure. Programmable functions can be set via software or manually via the front display panel. Crystal Series can be configured in the following operating modes:
ON LINE: maximum load protection and output voltage waveform quality;
ECO Mode: to increase efficiency (up to to 98%); allows you to select LINE INTERACTIVE technology;
SMART ACTIVE: the UPS automatically decides the operating mode based on the mains power quality;
STANDBY OFF: the UPS can be selected to function only when the mains power supply fails (emergency only mode);
Frequency Converter: operation (50 or 60 Hz).

BATTERY OPTIMISATION

The Crystal Series range has a deep discharge protection device to optimize battery life. Periodically the UPS carries out a battery efficiency test (which can also be manually activated); its wide input voltage tolerance range helps to reduce battery usage and maintain performance over time.



Front Panel

ADVANCED COMMUNICATIONS

Sentinel Dual offers maximum flexibility for integration with all types of communication systems. • Multi-platform communication for all operating systems and network environments: PowerShield3 supervision and shutdown software for Windows operating systems 11, 10, 8, Server 2022, 2019, 2016 and previous versions, Windows Server Virtualization Hyper-V, macOS, Linux, Citrix XenServer and other Unix operating systems; • UPS Tools configuration and customisation software supplied as standard; • RS232 serial port and opto-isolated contacts; • USB port; • Slot for communications boards such as Modbus/Jbus, TCP/IP-SNMP and relay contacts.

LOW NOISE LEVEL

Thanks to the use of high frequency components and load-based fan speed control, the noise produced by the UPS is less than 40 dBA.

HIGH QUALITY OUTPUT VOLTAGE

- Even with non-linear loads (IT loads with a crest factor of up to 3:1);
- High short circuit current on bypass;
- High overload capacity: 150% by inverter (even with mains failure);
- Filtered, stabilised and reliable voltage (ON LINE double conversion technology (VFI compliant with EN62040-3) with filters for the suppression of atmospheric disturbances);
- Power factor correction: UPS input power factor close to 0.99 and sinusoidal current uptake.



Rear Panel

Technical Specifications:



MODEL		CL1000	CL2000	CL3000
Capacity (VA/Watts)		1000/900	2000/1800	3000/2700
INPUT				
Nominal Voltage Range		200/208/220/230/240Vac or 100/110/115/120/127Vac		
Input voltage range		110~300Vac or 55~150Vac @ 60% load, 160~300Vac or 80~145Vac @ 100% load		
Frequency range		45~55Hz/55~65Hz (Auto-detect)		
Power factor		≥0.99 @Nominal voltage (100% load)		
OUTPUT				
Output voltage		200/208/220/230/240Vac or 100/110/115/120/127Vac		
Power factor		0.9		
Voltage regulation		±1%		
Frequency range (Synchronized range)		45~55Hz / 56~64Hz		
Frequency range (Battery mode)		50Hz / 60Hz ±0.1Hz		
Current crest ratio		3:1		
Harmonic distortion		≤3% THD (Linear load) ≤6% THD (Non-linear load)		
Transfer time	AC to DC	Zero		
	Inverter to bypass	4ms (Typical)		
Waveform		Pure sinewave		
EFFICIENCY				
AC mode		88%	89%	90%
Battery mode		83%	85%	86%
BATTERY				
Standard model	Battery type	AGM/SLA		
	Numbers	2	4	6
	Backup time	Estimated remaining time displayed on the LCD		
	Typical recharging time	4 hours recover to 90% capacity		
	Charging current(max.)	1.0A		
	Charging voltage	27.4/41.1Vdc ±1%	54.7Vdc /82.1Vdc /109.4Vdc±1%	82.1Vdc /109.4Vdc ±1%
Long run model	Battery numbers	Depending on the capacity of external batteries		
	Charging current(max.)	6A/12A(Double board)		
	Charging voltage	27.4/41.1Vdc ±1%	54.7Vdc/82.1Vdc/109.4Vdc±1%	82.1Vdc/109.4Vdc ±1%
INDICATORS				
LCD		Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators		
ALARM				
Battery mode		Beeping every 4 seconds		
Battery low		Beeping every second		
Overload		Beeping twice every second		
Fault		Continuously beeping		
PHYSICAL				
Standard model	Dimension, D×W×H(mm)	400×144×215	470×191×336	
	Net weight(kgs)	10/13	21/25/30	21/25/30
Long run model	Dimension, D×W×H(mm)	400×144×215	470×191×336	
	Net weight(kgs)	5.6	11.0	11.0
ENVIRONMENT				
Humidity		20-90% RH @ 0-40°C (Non-condensing)		
Noise level		<50dB @ 1 Meter		
Protection Standard		IP20		
MANAGEMENT				
Smart RS232/USB		Supports Windows® 2000/2003/XP/Vista/2008 Windows® 7/8 Linux, FreeBSD and MAC		
Optional SNMP		Power management from SNMP manager and web browser		