

LEVELUPS

SERIES

10-1000 kVA

3:3
PHASE

10-30 kVA

3:1
PHASE

ONLINE UPS



DATA CENTER



MEDICAL



TRANSPORT



INDUSTRY



EMERGENCY



UPS ONLINE



TOWER



POWER FACTOR



SERVICE



HIGHLIGHTS

- True Three Level Rectifier and Inverter Technology
- Ultra High Energy Efficiency
- Full Rated Power Factor kW=kVA

Innovative 3 Level Technology

- LEVELUPS Series with Innovative 3 Level Technology is a true on-line double conversion, three-phase UPS system that provides one of the highest level energy efficiencies in the industry.
- Three level inverter & rectifier design LEVELUPS Series brings the newest power conversion technology and delivers efficiency up to 96% at 50-75% load operation which is the most common operating range.



The LEVELUPS Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

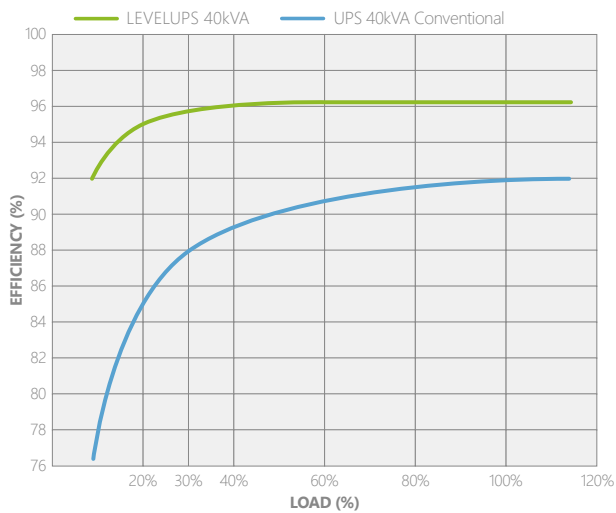


POWER
FORLIFE

Aytemiz
MAKELSAN®
Uninterruptible Power Supplies

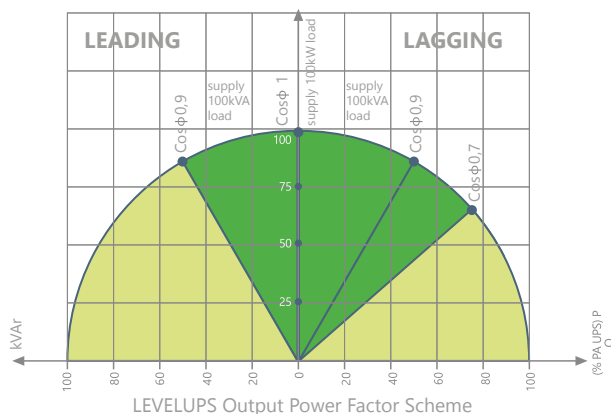
High Efficiency & Low Total Cost of Ownership

- Less energy consumption to supply the loads thanks to high efficiency up to 96%.
- Reduced energy loss.
- Reduced electricity usage and air conditioning requirements.
- Reduction in operating cost of UPS.
- IGBT based power factor correction technology provides input power factor close to 1 ($\geq 0,99$). The high input power factor leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than 3% helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance.



High Output Power Factor 1

- Output power factor of 1 (kVA=kW) rate provides up to 25% more active power than a traditional UPS.
- Suitable for modern power supply application with unit or capacitive power factor (e.g. new servers generation).
- No reduction in active power from 0,9 leading to 0,9 lagging.



Maximum Availability

- Parallel configuration up to 8 units per redundancy (N+1) and power increase.
- Loop connection helps the UPS system to continue the operation when the connection cable is interrupted.

Standard Electrical Features

- Parallel-Redundant (N+X) Systems
- Co-Aging
- Dual Input
- Common Battery
- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
- Redundant Power Supply
- Power Walk-in for Progressive Rectifier Start-up when the Mains is Restored
- Battery Temperature Sensor
- Static and Manual Bypass Operation

Advanced Communication Features

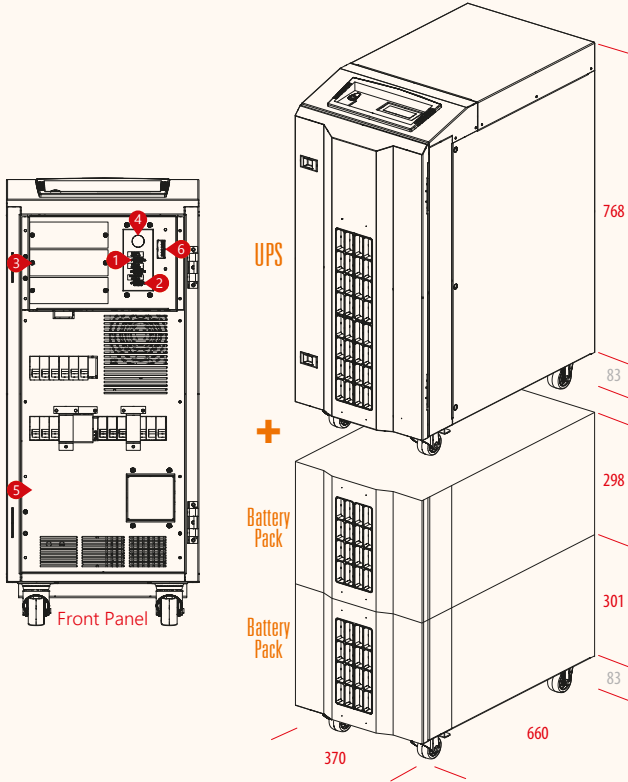
- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- ProfiBUS (Optional)

Flexibility

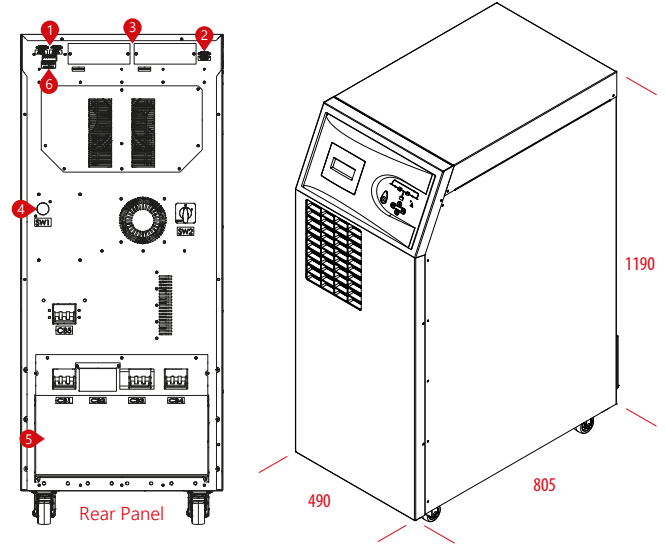
- Temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Different sizes of 10-40kVA cabinets for larger capacity of internal batteries when long autonomy times are required.
- 3/1 Phase version is available for 10-30kVA power ratings
- Frequency converter mode.
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output.
- Compatible version with EN 50171 for supplying power to emergency lighting systems.

DETAILS

LEVELUPS SERIES 10-15-20 kVA

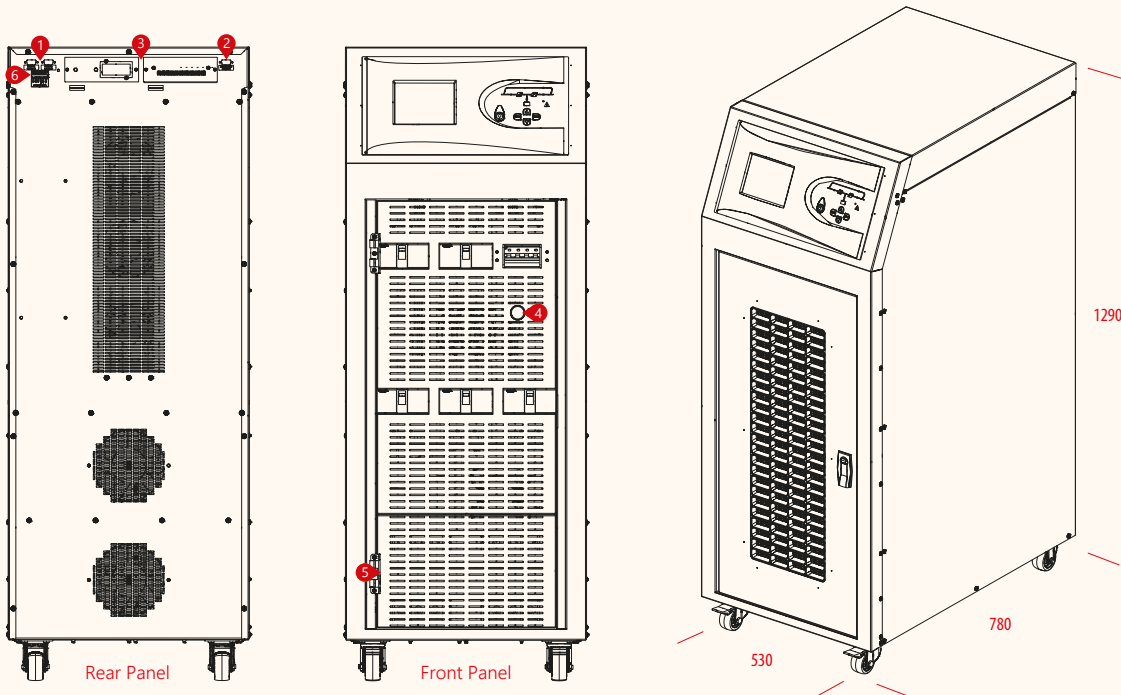


LEVELUPS SERIES 10-15-20-30-40-60 kVA



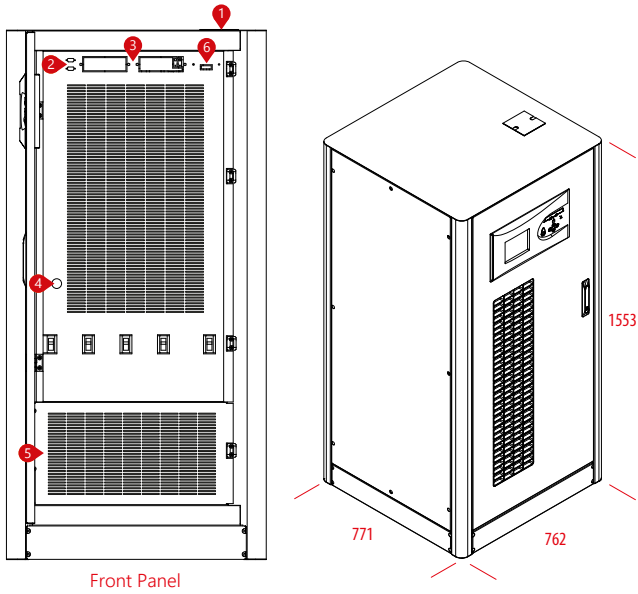
- 1. Parallel Port Terminal
- 2. RS232 Terminal
- 3. Optional Card Slots
- 4. DC Bus Ramping Up Button
- 5. Connection Terminal
- 6. External Battery Temperature Sensor Terminal

LEVELUPS SERIES 80-100-120 kVA

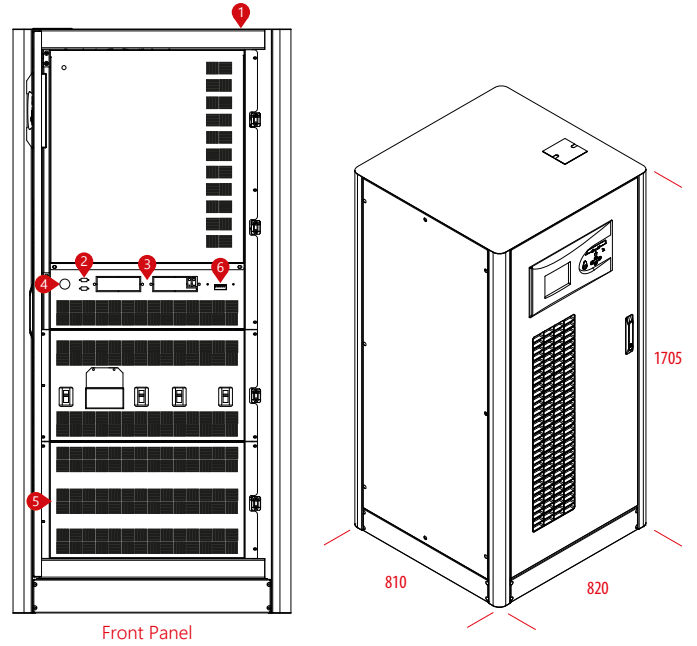


DETAILS

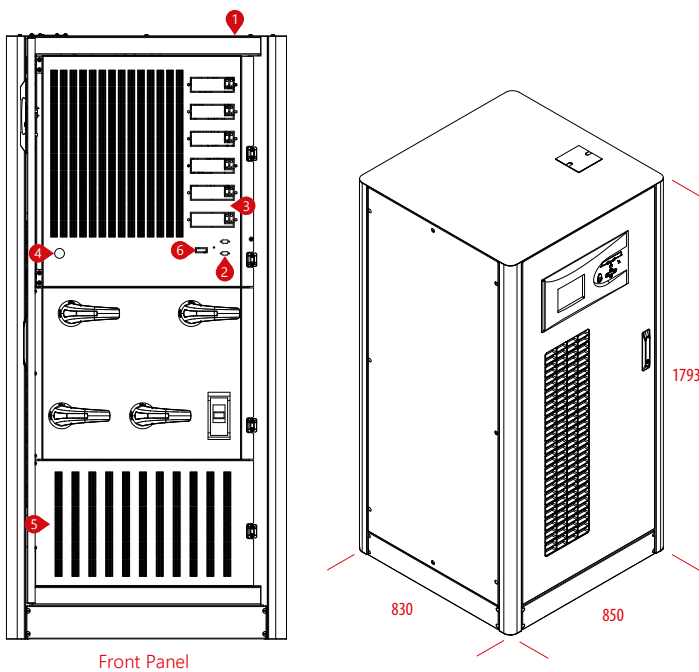
LEVELUPS SERIES 80 kVA



LEVELUPS SERIES 100-120 kVA



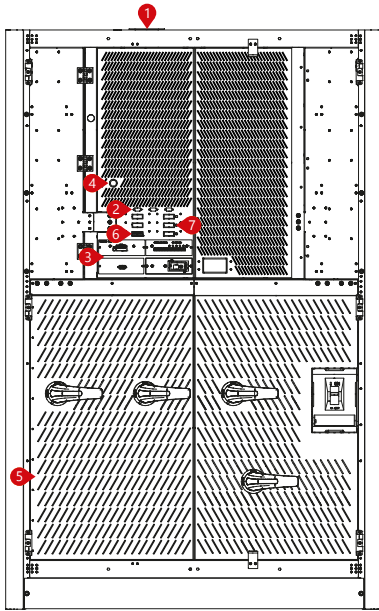
LEVELUPS SERIES 160-200-250 kVA



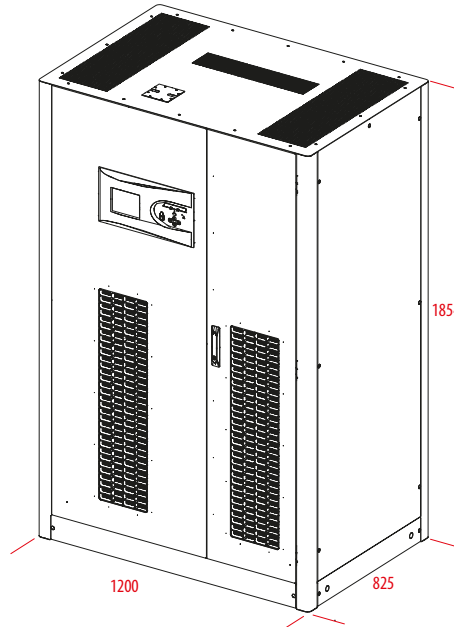
- 1. Parallel Port Terminal
- 2. RS232 Terminal
- 3. Optional Card Slots
- 4. DC Bus Ramping Up Button
- 5. Connection Terminal
- 6. External Battery Temperature Sensor Terminal

DETAILS

LEVELUPS SERIES 300-400-500 kVA

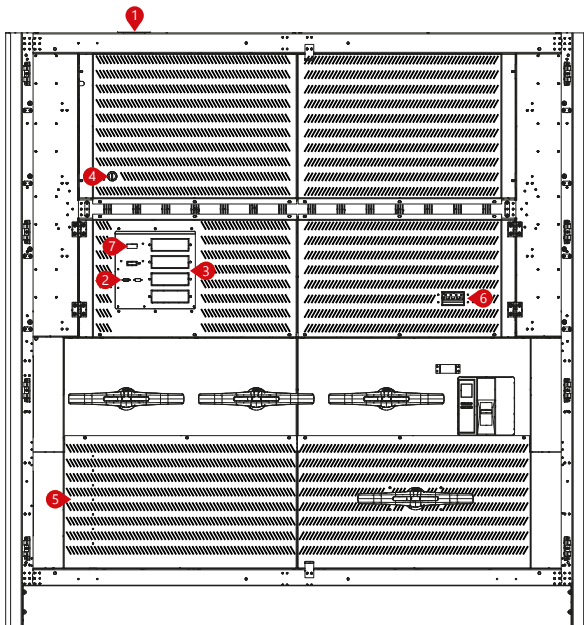


Front Panel

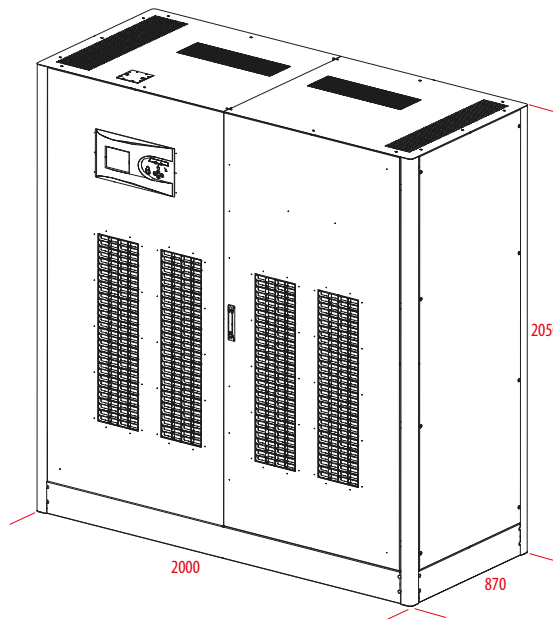


- 1. Parallel Port Terminal
- 2. RS232 Terminal
- 3. Optional Card Slots
- 4. DC Bus Ramping Up Button
- 5. Connection Terminal
- 6. External Battery Temperature Sensor Terminal
- 7. Optional Slot

LEVELUPS SERIES 600-800-1000 kVA



Front Panel



MODEL																
Capacity	10kVA	15kVA	20kVA	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	80kVA	100kVA	120kVA	
Power Watt	9kW	13.5kW	18kW	9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW	72kW	90kW	108kW	
INPUT																
Nominal Voltage	380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)															
Voltage Tolerance	-20% +15%															
Frequency Tolerance	50 / 60 Hz ±10% (Selectable)															
Power Factor	>0.99															
Total Harmonic Distortion (THDi)	<3%															
OUTPUT																
Power Factor	0.9 (1 Optional)															
Nominal Voltage	380/400/415 VAC 3 P+N															
Voltage Tolerance	Statik ±1, Dynamic ±3															
Frequency Tolerance	50 / 60 Hz ±0,01% (Battery Mode)															
Output THD	Linear Load <1% / Non-Linear Load <3%															
Crest Factor	3:1															
Overload Capacity*	At 125% Load 10min, At 150% Load 1min															
Efficiency (Online Mode)	96%															
Efficiency (Eco Mode)	99%															
BYPASS																
Nominal Voltage	380/400/415 VAC 3 P+N															
Voltage Tolerance	%15 (Configurable from 10% to 30%)															
Frequency Tolerance	±5 (Selectable)															
BATTERY																
Type	VRLA / GEL															
Quantity (12V DC VRLA)	60															
Charge Capacity	12,5% of Active Power (Nominal 0,1 C10, Adjustable)															
Recharge Time	6-8 hours															
Internal Battery	62 x 7Ah or 9Ah	60 x 7Ah or 9Ah	External Battery			External Battery			External Battery							
ENVIRONMENTAL																
Operating Temperature	For UPS 0°C/+40°C For Battery +15°C/+25°C															
Storage Temperature	For UPS -15°C/+45°C For Battery 0°C/+30°C															
Protection Class	IP20															
Humidity	0-95% (Without Condensation)															
Altitude	<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84															
Noise Level	<53dBA	<53dBA	<55dBA	<60dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	<65dBA	
COMMUNICATION																
Communication Port	RS232 Standart, RS485 and SNMP Adapter Option															
STANDARDS																
Quality	ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB															
Performance	EN62040-3 (VFI-SS-111, Bureau Veritas Certified)															
EMC/LVD	EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Accredited Test Report															
DIMENSIONS & WEIGHT																
Cabinet Dimensions (mm)	Width	370			490						530			763		810
	Depth	660			805						780			771		820
	Height	850			1190						1290			1555		1705
Net Weight (kg)	85	85	85	125	126	131	145	173	323				331	353	368	
Packaging Dimensions (mm)	Width	500			600						650			900		900
	Depth	760			900						900			970		970
	Height	1000			1400						1400			2040		2040
Gross Weight (kg)	105	105	105	145	146	151	166	193	353				361	383	398	

* under certain conditions.
3 Phase in / 1 Phase Out Version is Available. (10 to 30kVA)

Aytemiz-Makelsan reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Aytemiz-Makelsan products previously or subsequently sold. Aytemiz-Makelsan does not guarantee the items of the accuracy and completeness.

MODEL										
Capacity		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Power Watt		144kW	180kW	225kW	270kW	360kW	450kW	540kW	720kW	900kW
INPUT										
Nominal Voltage		380/400/415 VAC 3 P+N (Optional 220/380 VAC -37% +22% 3 P+N+PE)								
Voltage Tolerance		-20% +15%								
Frequency Tolerance		50 / 60 Hz ±10% (Selectable)								
Power Factor		>0.99								
Total Harmonic Distortion (THDi)		<3%								
OUTPUT										
Power Factor		0.9 (1 Optional)								
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		Statik ±1, Dynamic ±3								
Frequency Tolerance		50 / 60 Hz ±0,01% (Battery Mode)								
Output THD		Linear Load <1% / Non-Linear Load <3%								
Crest Factor		3:1								
Overload Capacity*		At 125% Load 10min, At 150% Load 1min								
Efficiency (Online Mode)		96%								
Efficiency (Eco Mode)		99%								
BYPASS										
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		15% (Configurable from 10% to 30%)								
Frequency Tolerance		±5 (Selectable)								
BATTERY										
Type		VRLA / GEL								
Quantity (12V DC VRLA)		60								
Charge Capacity		12,5% of Active Power (Nominal 0,1 C10, Adjustable)								
Recharge Time		6-8 hours								
Internal Battery		External Battery								
ENVIRONMENTAL										
Operating Temperature		For UPS 0°C/+40°C For Battery +15°C/+25°C								
Storage Temperature		For UPS -15°C/+45°C For Battery 0°C/+30°C								
Protection Class		IP20								
Humidity		0-95% (Without Condensation)								
Altitude		<1000m: Correction Factor 1, <2000m: Correction Factor >0.92, <3000m: Correction Factor >0.84								
Noise Level		<72dBA			<74dBA			<75dBA		
COMMUNICATION										
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option								
STANDARDS										
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB								
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)								
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Accredited Test Report								
DIMENSIONS & WEIGHT		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Cabinet Dimensions (mm)	Width	830			1200			2000		
	Depth	870			825			870		
	Height	1800			1854			2050		
Net Weight (kg)	475	490	553	830	840	850	1510	1510	1510	
Packaging Dimensions (mm)	Width	900			1370			2100		
	Depth	970			845			950		
	Height	2040			2040			2250		
Gross Weight (kg)	505	520	583	870	880	890	1590	1590	1590	

* under certain conditions.

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