

# BOXER

SERIES

10-1000 kVA

10-30 kVA

ONLINE UPS

3:3  
PHASE

3:1  
PHASE



DATA CENTER



MEDICAL



TRANSPORT



INDUSTRY



EMERGENCY



UPS ONLINE



TOWER



POWER FACTOR



SERVICE



## HIGHLIGHTS

- IGBT PWM Rectifier & Inverter Technology
- Low Input Current THD (<3%)
- High Input Power Factor (>0.99)

## DSP Power Factor Corrected IGBT Rectifier

- Equipped with its new IGBT rectifier BOXER Series keeps your critical loads protected while its space-saving compact design and front access for maintenance successfully reduce mean time to repair (MTTR).
- Thanks to the wide variety of accessories and options BOXER Series presents maximum flexibility advantage to users and optimizes total cost of ownership.



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

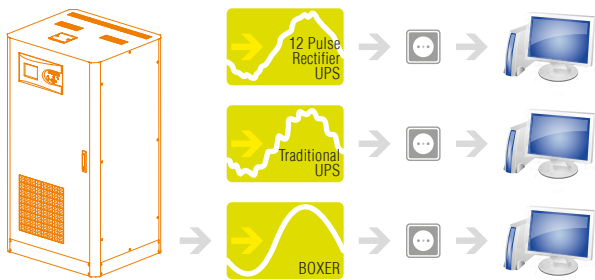


POWER  
FORLIFE

**Aytemiz**  
MAKELSAN®  
Uninterruptible Power Supplies

## High Performance & Low Total Cost of Ownership

- IGBT based power factor correction technology provides input power factor close to 1 ( $\geq 0,99$ ). The high input power 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.



	THD	Power Factor
BOXER with IGBT Rectifier	<3%	<0.99
Traditional UPS with Input Filter	<10%	<0.95
UPS without Input Filter	<25%	<0.85

## High Input Power Factor

- 0,99 Input power factor ensures clean and sinusoidal input current.
- The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

## 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

- 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 & Manual Bypass Operation

## Advanced Communication Features

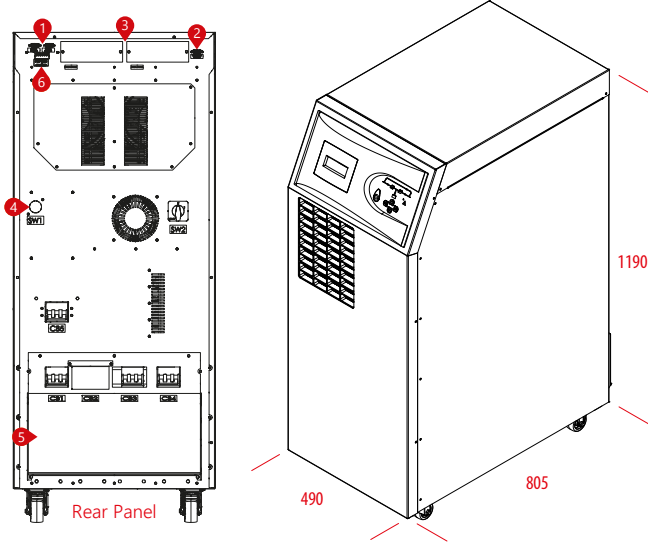
- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)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

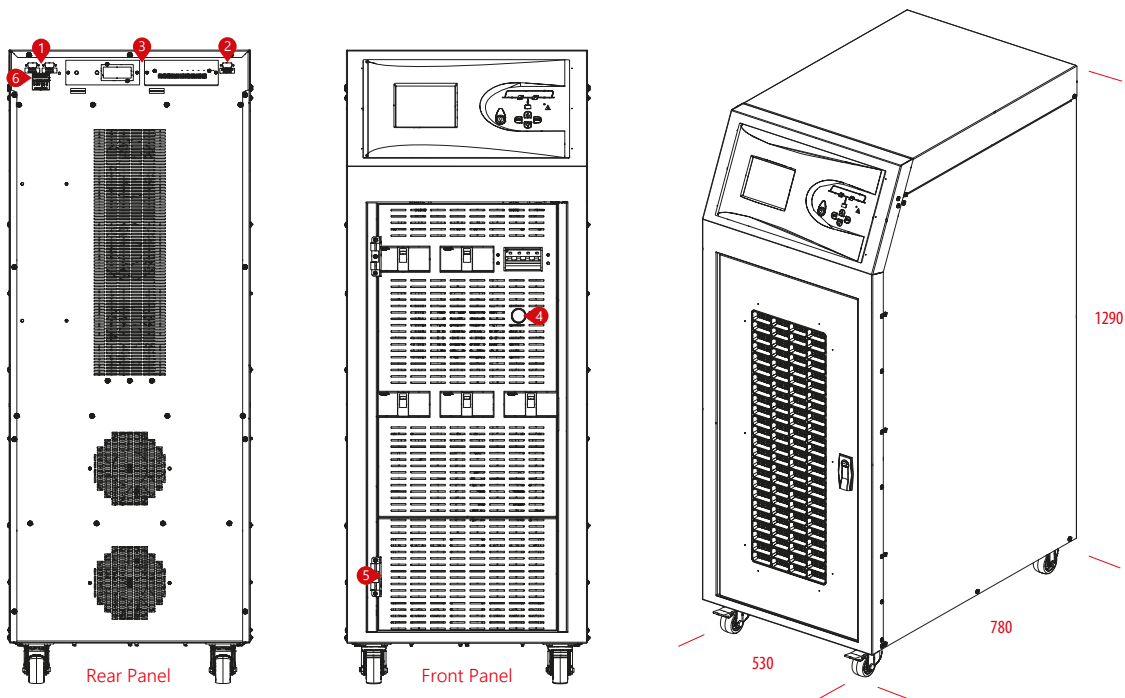
DETAILS

**BOXER** SERIES 10-15-20-30-40-60 kVA



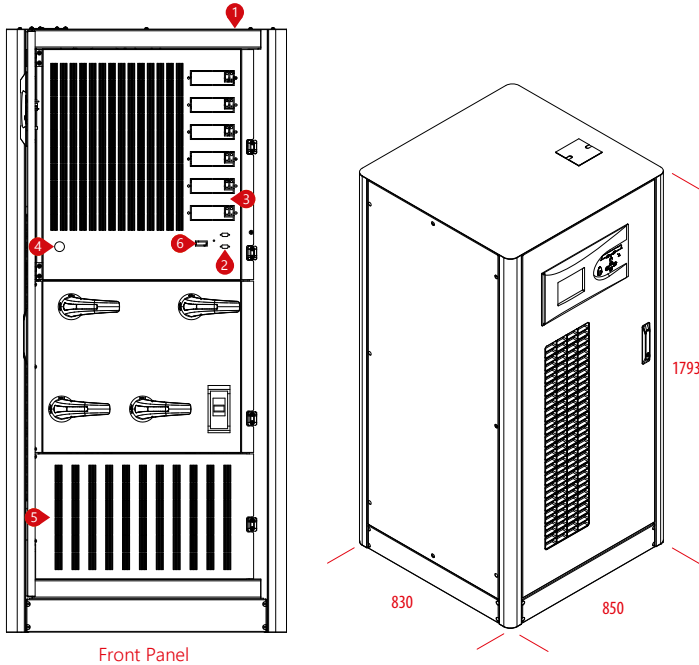
1. Parallel Port Terminal
2. RS232 Terminal
3. Optional Card Slots
4. DC Bus Ramping Up Button
5. Connection Terminal
6. External Battery Temperature Sensor Terminal

**BOXER** 80-100-120 kVA



DETAILS

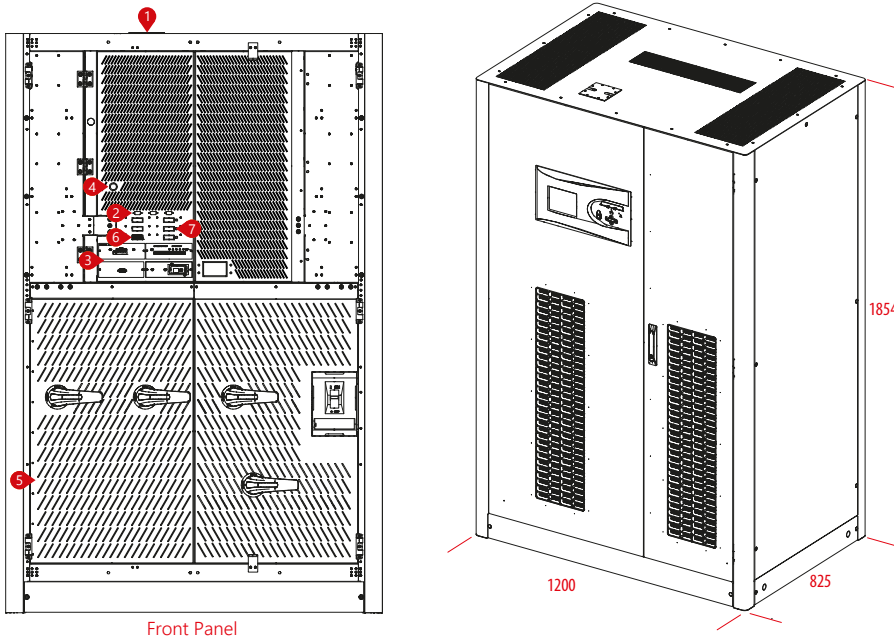
**BOXER** SERIES 160-200-250 kVA



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

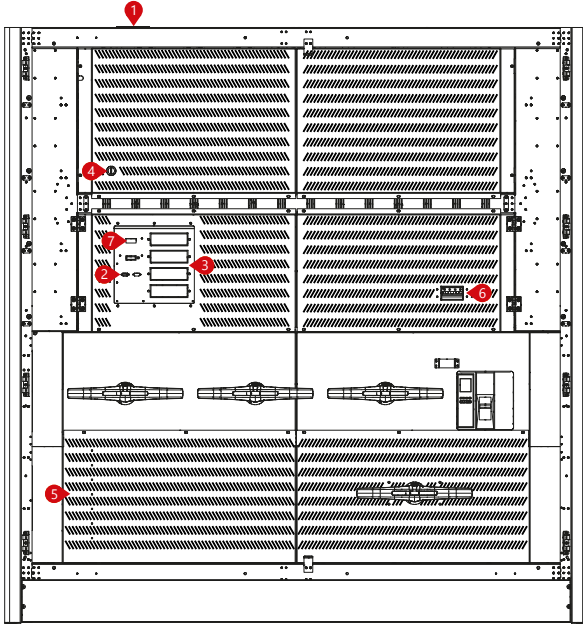
**BOXER** SERIES 300-400-500 kVA



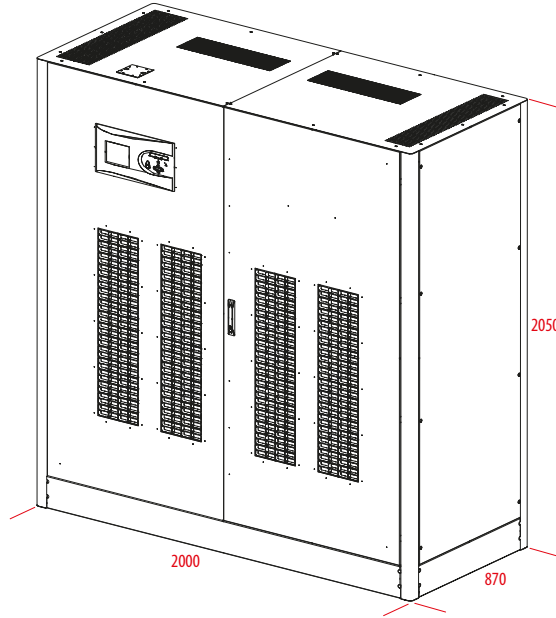
Front Panel

DETAILS

**BOXER** 600-800-1000 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

MODEL										
Capacity		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
Power Watt		9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW
<b>INPUT</b>										
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%								
<b>OUTPUT</b>										
Power Factor		0.9								
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)		Up to 92%								
Efficiency (Eco Mode)		Up to 99%								
<b>BYPASS</b>										
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		%15 (Configurable from 10% to 30%)								
Frequency Tolerance		±5 (Selectable)								
<b>BATTERY</b>										
Type		VRLA / GEL								
Quantity (12V DC VRLA)		62								
Charge Capacity		25% of Active Power (Nominal 0,1 C10, Adjustable)								
Recharge Time		6-8 hours								
Internal Battery		60 x 7Ah or 9Ah				External Battery				
<b>ENVIRONMENTAL</b>										
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										
<b>COMMUNICATION</b>										
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option								
<b>STANDARDS</b>										
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								
<b>DIMENSIONS &amp; WEIGHT</b>		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
Cabinet Dimensions (mm)	Width	490						530		
	Depth	805						780		
	Height	1190						1290		
Net Weight (kg)	125	126	131	145	173	323	222	231	240	
Packaging Dimensions (mm)	Width	600						650		
	Depth	900						900		
	Height	1400						1400		
Gross Weight (kg)	145	146	151	166	193	353	253	261	270	

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

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MODEL										
Capacity		160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA
Power Watt		144kW	180kW	225kW	270kW	360kW	450kW	540kW	720kW	900kW
<b>INPUT</b>										
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%								
<b>OUTPUT</b>										
Power Factor		0.9								
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)		Up to 92%								
Efficiency (Eco Mode)		Up to 99%								
<b>BYPASS</b>										
Nominal Voltage		380/400/415 VAC 3 P+N								
Voltage Tolerance		15% (Configurable from 10% to 30%)								
Frequency Tolerance		±5 (Selectable)								
<b>BATTERY</b>										
Type		VRLA / GEL								
Quantity (12V DC VRLA)		62								
Charge Capacity		25% of Active Power (Nominal 0,1 C10, Adjustable)								
Recharge Time		6-8 hours								
Internal Battery		External Battery								
<b>ENVIRONMENTAL</b>										
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		
<b>COMMUNICATION</b>										
Communication Port		RS232 Standart, RS485 and SNMP Adapter Option								
<b>STANDARDS</b>										
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								
<b>DIMENSIONS &amp; WEIGHT</b>		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	1740	1740	
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	1820	1820	

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