Aytemiz MAKELSAN®
Uninterruptible Power Supplies/Generator

POWER FORLIFE

HF SERIES
BOXER FS ON-LINE UPS

10-30 kVA 3:1 PHASE

10-60 kVA 3:3 PHASE



- IGBT PWM Rectifier and Inverter Technology
- Low Input Current THD (<3%)
- High Input Power Factor (>0.99)
- 62 Pcs 18 Ah Battery Capacity
- Front Cable Entry Design

DATA CENTER | MEDICAL | INDUSTRIAL | TRANSPORT | EMERGENCY

VFI TYPE	PF 0.9		24H
ON-LINE UPS	POWER FACTOR	TOWER	SERVICE

DSP-Controlled Power Factor Correction IGBT Rectifier

- Equipped with a new IGBT rectifier, the HF Series BOXER FS secures your critical loads while reducing the Mean Time to Repair (MTTR) through its space-saving compact design and front-access maintenance capability.
- Thanks to its wide range of accessories and options, the HF series BOXER FS Series offers maximum flexibility to users while optimizing the total cost of ownership.

Avrupa AC UPS Tedarik Kodu Seviyesinden Daha Yüksek Verimlilik Değeri

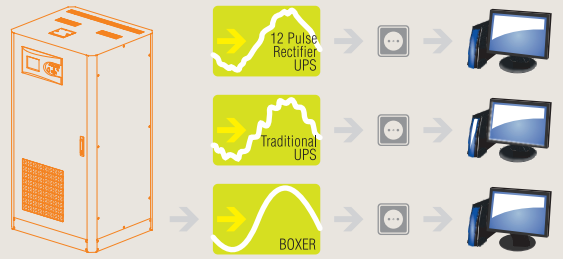
BUREAU VERITAS Certification

LEVELUPS Serisi Bureau Veritas tarafından Avrupa Ürün Performansı standardına göre sertifikalandırılmıştır. (EN 62040-3)

TSE TSE-HYB CE

Compact Design

- IGBT-based power factor correction technology maintains the input power factor close to unity (e.g. 0.99). Thanks to the high input power factor, electricity costs are reduced, while cable, panel, fuse, and generator requirements are minimized, thereby lowering overall investment costs.
- Low input current total harmonic distortion (THDi < 3%) prevents interference and eliminates the need for costly harmonic filters.
- It offers a compact design 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

- An input power factor of 0.99 ensures a clean and sinusoidal input current.
- High input power reduces electricity costs and minimizes the need for cables, switchboards, fuses, and generators, thereby lowering overall investment costs.

Maximum Availability

- Parallel configuration allows up to 8 units for redundancy (N+1) and power expansion.
- Loop connection ensures continuous UPS operation even if a communication cable is disconnected.

BOXER FS

Standard Electrical Features

- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short-Circuit and Overload Protection
- Parallel Connection Capability
- Redundant Power Supply
- Advanced Rectifier with Mains Recovery
  Soft Start (Gradual Power Input for Startup)
- Battery Temperature Sensor
- Static and Manual Bypass Operation

Advanced Communication Features

- 1500 Real-Time Event Log With Detailed Parameters.
- User-Friendly Multilingual 320x240 Graphical Display Provides Operating Information.
- Operating 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 use with external battery cabinets for extended runtime.
- External battery cabinets providing long runtime for different battery sizes.
- Frequency converter mode.
- Isolation transformers to change the neutral connection in separate power supply systems or to provide galvanic isolation between input and output.
- Version compliant with EN 50171 for supplying emergency lighting systems.

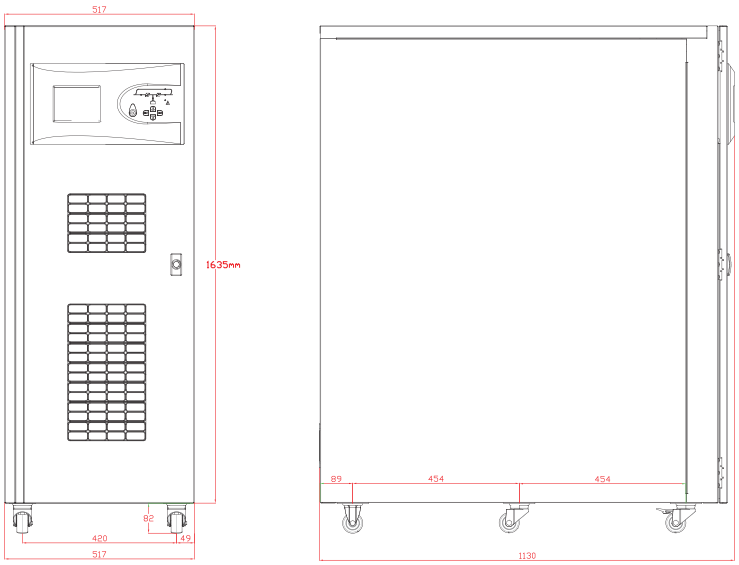
MODEL		BOXER FS ON-LINE UPS					
Capacity(kVA)		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA
Power (kW)		9kW	13.5kW	18kW	27kW	36kW	54kW
INPUT							
Nominal Voltage		380/400/415 VAC 3 P+N+PE					
Voltage Tolerance		-15% +18%					
Frequency Tolerance Range		50 / 60 Hz ±%10 (Selectable)					
Power Factör		>0.99					
Total Harmonic Distortion (THDi)		<3%					
OUTPUT							
Power Factor		0,9					
Nominal Voltage		380/400/415 VAC 3 P+N					
Voltage Tolerance		Static ±1, Dynamic ±3					
Frequency Tolerance Range		50 / 60 Hz ±0,01 % (Battery Mode)					
Output THDv		Linear Load < 1% / Non-Linear Load < 3%					
Crest Factor		3:1					
Overload Capacity*		125% load for 10 min, 150% load for 1 min, >150% immediate bypass.					
Efficiency (Online Mod)		92%					
Efficiency (Eco Mod)		99%					
BYPASS							
Nominal Voltage		380/400/415 VAC 3 P+N					
Voltage Tolerance		15 %(10%–30% configurable within the range)					
Frequency Tolerance		±5 (Selectable)					
BATTERY							
Type		VRLA / GEL					
Quantity (12V DC VRLA)		62					
Charging Capacity		25% of active power (Nominal 0.1 C10, adjustable)					
Charging Time		6–8 hour					
Internal Battery		62 x 18Ah					
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% (Non-condensing)					
Altitude		<1000 m: Derating factor 1, <2000 m: Derating factor >0.92, <3000 m: Derating factor >0.84					
Noise Level		<72dBA					
COMMUNICATION							
Communication Port		RS232 Standard, RS485 and SNMP Adapter Optional					
STANDARD							
Quality		ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB					
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certificate)					
EMC/LVD		EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Akredite Test Raporu					
DIMENSIONS & WEIGHT		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA
Cabinet Dimensions(mm)	Width	517	517	517	517	517	517
	Depth	862	862	862	1132	1130	1130
	Height	1383	1383	1383	1382	1635	1635
Net Weight (kg)		160	172	240	245	260	280

* Under specific conditions,
a 3-phase input / 1-phase output version is available (10–30 kVA).

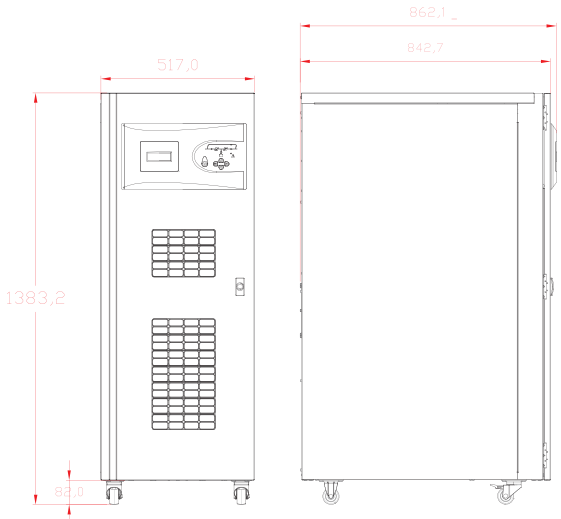
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DETAILS

BOXER FS 40-60kVA



BOXER FS 10-15-20kVA



BOXER FS 30kVA

