

SMART FC

SERIES

10-800 kVA **3:3**

PHASE

FREQUENCY CONVERTER



DATA CENTER



MEDICAL



TRANSPORT



INDUSTRY



EMERGENCY



TOWER



POWER FACTOR



SERVICE

Innovative 2 or 3 Level Technology

+ **SMART FC** Series with Innovative 2 or 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 **SMART FC** 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.



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



The **SMART FC** Series is certified by TÜV SÜD with regard to product safety (EN 62040-1)

BUREAU VERITAS
Certification

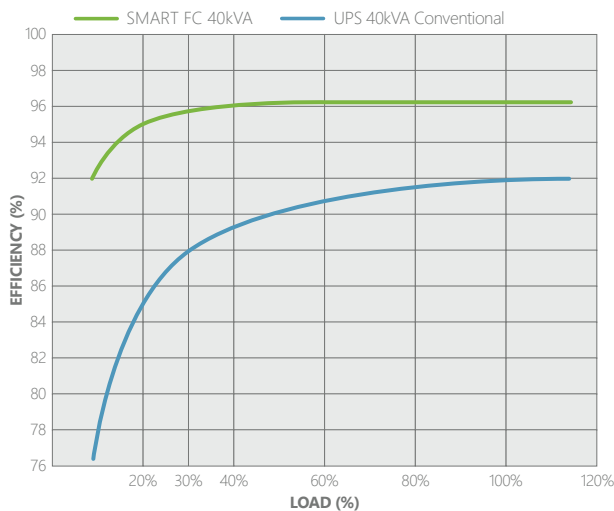


The **SMART FC** Series is attested by Bureau Veritas with regard to performance (EN 62040-3)



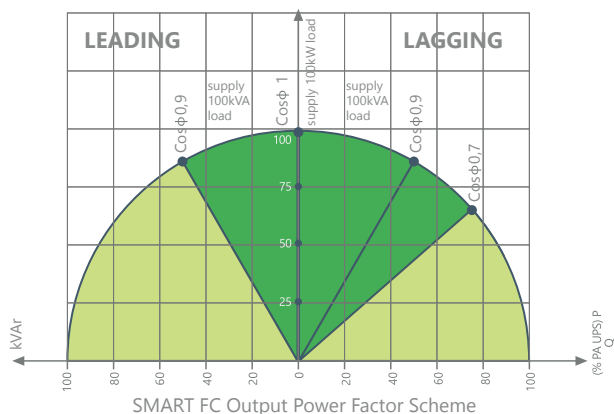
High Efficiency & Low Total Cost of Ownership

- 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.

MODEL																			
Capacity		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	800kVA
Power Watt		9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW	144kW	180kW	225kW	270kW	360kW	450kW	540kW	720kW	800kW
INPUT																			
Nominal Voltage		400 VAC 3 Phase +N (optional 440V or 480V 3P)																	
Voltage Tolerance		-20% +15%																	
Frequency Tolerance		50 / 60 Hz ±10% (Selectable)																	
Power Factor		>0.99																	
Total Harmonic Distortion		THDi <%3																	
OUTPUT																			
Power Factor		0.7-1.0 (Selectable)																	
Nominal Voltage		380/400/415 VAC 3 Phase + N																	
Voltage Tolerance		Static ±1, Dynamic ±3																	
Frequency Tolerance		50Hz / 60Hz ±0,01%																	
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)		Up to 99%																	
BYPASS																			
Nominal Voltage		380/400/415 VAC 3 Phase + N																	
Voltage Tolerance		15% (Configurable from 10% to 30%)																	
Frequency Tolerance		±5 (Selectable)																	
ENVIRONMENTAL																			
Operating Temperature		0°C / +40°C																	
Storage Temperature		-20°C / +55°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		<53 dBA		<55 dBA		<60 dBA		<65 dBA		<72 dBA				<74 dBA				<75 dBA	
COMMUNICATION																			
Communication Port		RS232 (Standart), RS485, MOD-Bus, J-Bus, Web, Tel-Net, GPRS, CAN-Bus, SNMP (Option)																	
STANDARDS																			
Quality		ISO 9001, ISO 14001, ISO 18001, TSE-HYB																	
Performance		EN62040-3 (VFI-SS-111, Bureau Veritas Certified)																	
EMC/LVD		EN62040-2, EN62040-1, EN60950, (TÜV SÜD Certified)																	
DIMENSIONS & WEIGHT		10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	160kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	800kVA
Cabinet Dimensions (mm)	Width	490					763		810		830			1250			1999		
	Depth	805					771		820		870			845			867		
	Height	1190					1555		1705		1800			2102			2045		
Net Weight (kg)		100	100	107	118	125	260	270	350	355	450	460	470	850	850	850	1740	1740	1990
Packaging Dimensions (mm)	Width	600					600		900		900			1370			2150		
	Depth	900					900		970		970			870			970		
	Height	1400					1400		2040		2040			2120			2120		
Gross Weight (kg)		140	141	145	164	185	353	361	376	387	398	491	500	890	890	890	1820	1820	2070

* under certain conditions.

3 Phase In / 1 Phase Out Version is Available. (10 to 30kVA)

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