

## TECHNICAL DATA SHEET B9000 FXS 60-80-100-125-160kVA

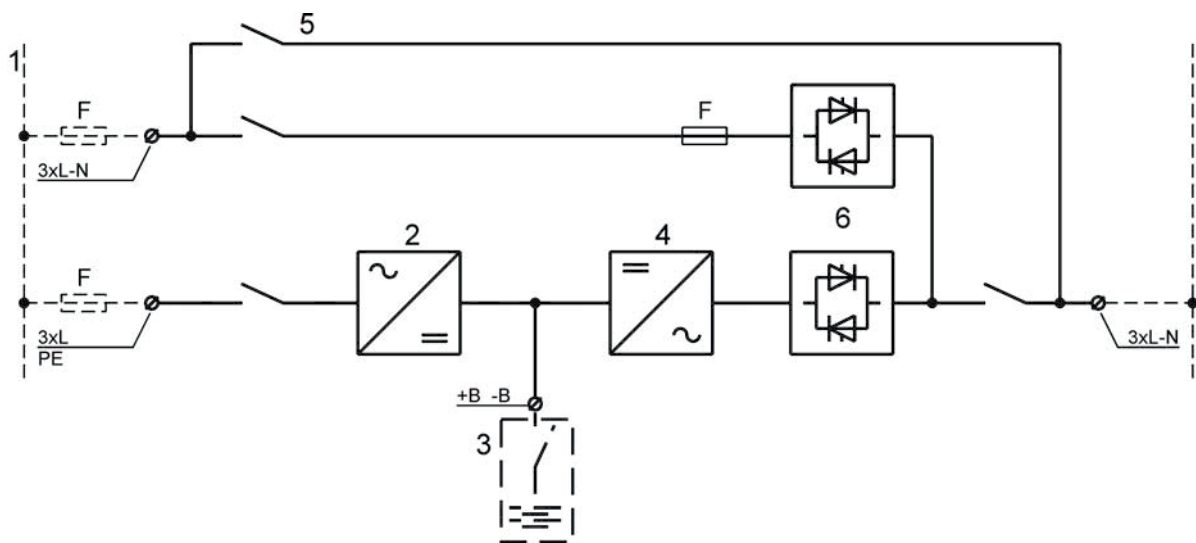
### GENERAL INFORMATION

POWER		kVA	60	80	100	125	160
UPS Type			ON LINE – Double Conversion				
Nominal output power (Cos φ 0,8)		kVA	60	80	100	125	160
Nominal output power (Cos φ1,0)		kW	48	64	80	100	128
Efficiency (AC ÷ AC) (ON LINE - Double Conversion)	@25% load	%	> 88				
	@50% load		> 90				
	@75% load		> 92				
	@100% load		> 93				
Efficiency (AC ÷ AC) (Eco Mode)		%	> 98				
Heat dissipation at nominal load and voltage		kW	3,8	4,8	6,0	7,5	9,6
		kcal/h	3,3	4,2	5,2	6,5	8,3
UPS ambient temperature		°C	0 ÷ 40				
BATTERY ambient temperature		°C	0 ÷ +25				
UPS storage temperature		°C	-10 ÷ +70				
BATTERY storage temperature		°C	-10 ÷ +60				
Relative humidity (non condensing)		%	< 95				
Altitude		m	< 1000 (above sea level)				
Power derating for altitude > 1000 m			According to "IEC62040-3", 1% power derating every 100m above 1000m, up to max 2000m				
Ventilation			Forced				
Requested cooling air volume		m <sup>3</sup> /h	1600	1800	2100	2300	2500
Audible noise level (according to IEC EN 62040-3)		dB	< 60				
Standard battery type lead acid		n° cells	300 – 312 adjustable				
Protection degree			IP 20				
Electromagnetic compatibility EMI			According to "IEC EN 62040-2" (CE marking)				
Safety			IEC EN 62040-1				
Test and performance			IEC EN 62040-3				
Paint			RAL 7016				
Accessibility			Front and top access for service				
Installation			Also against wall and/or side-by-side				
Dimensions		mm	W = 815 D = 865 H = 1705				
Weight (without battery)		kg	570	600	630	662	720
Static load (without battery)		kg/m <sup>2</sup>	948	998	1048	1101	1198



Input/Output cable connection		Bottom Side (Top Side on Request)
Transport		Base provided for forklift handling
Transport mechanical stress		According to "IEC EN 62040-3"
Design standards		"IEC EN 62040" "ISO 9001:2008"
Free contact interface		Standard per remotizzare i seguenti contatti: EPO – MCB – BCB – DIESEL MODE
Serial communication interface		Standard: RS232 - USB Optional: RS485 (Mod-Bus protocol)
Parallel configuration (optional)		Up to 5+1 (redundant parallel) Up to 6 (power parallel)

## BLOCK DIAGRAM



1. Input mains (separate for by-pass and rectifier)
2. Rectifier and battery charger
3. External battery
4. Inverter
5. Emergency line (by-pass) with optional backfeed contactor
6. Inverter (SSI) and by-pass (SSB) static switch

## UPS INPUT: RECTIFIER AND BATTERY CHARGER

POWER		kVA	60	80	100	125	160	
Input			Three-phase					
Nominal input voltage		Vac	400					
Range		%	-20/+15					
Input frequency		Hz	50 – 60					
Range			±5					
Input power factor			> 0.99					
Input current THD at nominal voltage and THDV <0,5%		@25% load @50% load @75% load @100% load	%	< 10 < 7 < 5 < 3				
DC output voltage accuracy		%	±1					
DC output voltage ripple		% rms	1					
Battery recharging characteristic			IU (DIN 41773)					
Maximum recharging current		A	15	15	15	20	20	
- at nominal load								
- with DCM function (max current)			50	50	100	100	100	
AC-DC converter type			PFC IGBT					
Input protection			Fuses					
Nominal current absorbed from mains (at nominal load and battery charged)		A	75	100	125	156	200	
Maximum current absorbed from mains (at nom. load and max. recharging current)		A	94	126	157	196	252	
Sectable walk-in		sec	Sectable from 5" to 30"					
Sectable hold-off		sec	Sectable from 1" to 300"					

## BATTERY

POWER		kVA	60	80	100	125	160
Type (standard) other on request			Lead Sealed maintenance free				
Number of Cells			300 – 312 adjustable				
Floating voltage at 25°C		Vdc	680 for 300 cells , 707 for 312 cells (adjustable)				
Minimum discharge voltage		Vdc	496 for 300 cells , 516 for 312 cells (adjustable)				
Inverter input current (at nominal Load)		kW	50	68	84	105	135
Inverter input current (at nominal load-minimum Vdc)		A	102	136	170	212	272
Battery Protection (external to the UPS)			Wall mounted fused switch box on request				
Battery Test			Included as standard				



## UPS OUTPUT: INVERTER

POWER		kVA	60	80	100	125	160
Inverter Bridge			IGBT (High Frequency PWM)				
Nominal output power (Cosφ 0,8)		kVA	60	80	100	125	160
Nominal output power (Cosφ 1,0)		kW	48	64	80	100	128
Efficiency (DC □ AC)	@25% load	%	90				
	@50% load		92				
	@75% load		94				
	@100% load		95				
Output			Three-phase + Neutral				
Nominal Output Voltage (selectable)		Vac	380-400-415				
Output Voltage Stability							
- Static (Balanced Load)		%	± 1				
- Static (Unbalanced Load)		%	± 2				
- Dynamic (Step Load 20%+ 100% ±20%)		%	± 5				
- Output Volt. Recovery Time(after step load)		ms	< 20				
- IEC EN 62040-3			Class 1				
Phase Angle Accuracy							
- Balanced Load		°	± 1				
- 100% Unbalanced Load			± 1				
Output Frequency (selectable)		Hz	50 - 60				
Output Frequency Stability							
- Free Running Quartz Oscillator		Hz	± 0,001				
- Inverter Sync. with Mains		Hz	± 2 (other on request)				
- Slew rate		Hz/s	1				
Nominal Output Current (@ 400 Vac output)							
- Cos φ 0,8		A	80	116	145	180	232
- Cos φ1			70	93	115	145	186
Overload Capability			10 min >100%...125%				
			1 min >125%...150%				
			10 s >150%...199%				
			100ms at 200%				
Short Circuit Current		A	140	186	230	290	370
Short Circuit Characteristic			Elect. short circuit protection, current limited at 2 times nominal current. Automatic stop after 5 seconds				
Selectivity			Within ½ cycle (Fuse gl 20% In)				
Output Waveform			Sinusoidal				
Output Harmonic Distortion							
- Linear Load		%	< 1				
- Non Linear Load			< 5				
- IEC EN 62040-3			Fully compliant				
Max Crest Factor without derating			3 : 1				



## UPS OUTPUT: BY PASS

Automatic static by-pass		Electronic Thyristor Switch
Protection		Fuses
Bypass	Vac	Three-phase + Neutral
Nominal Voltage (selectable) Range	Vac %	380-400-415 ±10
Nominal Frequency (selectable) Range	Hz %	50-60 ± (1±5) adjustable
Transfer mode		Without break
Transfer inverter → automatic bypass		In case of : - Static Switch test - Inverter test - Inverter not operating - Battery end of discharge
Retransfer automatic bypass → inverter		- Automatic - Block on bypass after 6 transfers within 2 minutes, reset by front panel
Overload Capability	%	150 Continuously 1000 For 1 Cycle
Manual By-Pass		Standard: - Electronically controlled - No break



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## OPTIONS

1. BATTERY TEMPERATURE VOLTAGE COMPENSATION
2. INSULATION TRANSFORMER ON BY-PASS
3. VOLTAGE ADAPTATION AUTO-TRANSFORMERS
4. RELAY CARD (Eight signals Alarms/Statuses), Free relay contact
5. SERIAL INTERFACE RS-485 (MOD-BUS protocol)
6. SNMP ADAPTER
7. REMOTE MONITORING PANEL
8. PARALLEL CARD INTERFACE KIT
9. EXTERNAL BATTERY CABINET
10. WALL MOUNTED FUSED SWITCH BOX
11. IN/OUT TOP CABLE ENTRY
12. SPECIAL PAINT
13. LOAD-SYNC BUS CARD INTERFACE KIT
14. BACK FEED PROTECTION

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## OTHER SOFTWARE SELECTABLE FEATURES

1. DIESEL-MODE
2. ECO-MODE
3. BOOST-CHARGE
4. RECTIFIER WALK-IN TIME
5. RECTIFIER DELAY ON STARTUP (HOLD-OFF TIME)
6. FREQUENCY CONVERTER MODE
7. DCM FUNCTION

