

TECHNICAL DATA SHEET

B9600FXS 400-500-600-800 kVA

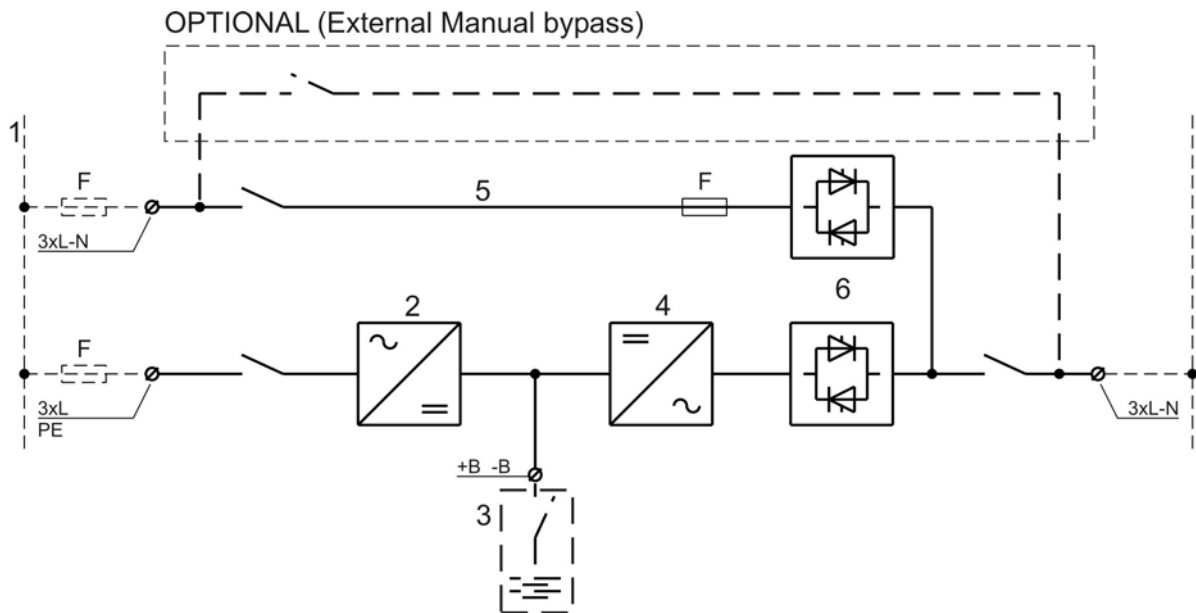
GENERAL INFORMATION

POWER		kVA	400	500	600	800
UPS Type		ON LINE - Double Conversion				
Nominal output power (Cosφ 0.9)		kVA	400	500	600	800
Nominal output power (Cosφ 1.0)		kW	360	450	540	720
Efficiency (AC ÷ AC) * (ON LINE - Double Conversion) * Certified by TÜV NORD GmbH	@25% load	%	> 92 > 95 > 95 > 94,5			
	@50% load					
	@75% load					
	@100% load					
Efficiency (AC ÷ AC) (Eco Mode)		%	> 98			
Heat dissipation at nominal load and voltage		kW	24.7	30.9	37.1	48.7
		kcal/h x 1000	21.3	26.5	31.8	41.7
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 ³ /h	3500	4000	4500	7000
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 9005			
Accessibility			Front and top access for service			
Installation			Also against wall and/or side-by-side			
Dimensions		mm	W = 1990 D = 950 H = 1920	W = 2440 D = 950 H = 2020	W = 2440 D = 950 H = 2020	W = 3640 D = 950 H = 1920
Weight (without battery)		kg	1820	2220	2400	3600
Static load (without battery)		kg/m ²	924	917	992	992
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"			

Rev.	Descrizione Description	Data Date	Emesso Issued	Approvato Approved	Lingua Language	Pagina Page	di Pag. of Pag.
/	First Issue	29.12.10	L. Fognani	P. Conti	E	1	6
B	Revision JSE415280	20.03.12	L. Fognani	P. Conti			
C	Revision JSE416401	30.10.12	L. Fognani	P. Conti			
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Design Standards		“IEC EN 62040” “ISO 9001:2008” - “ISO 14001”
Free contact interface		Standard to remotize the following contact: 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

It is possible to install an external Manual Bypass, either in matching cubicle or in wall mounted box (bypass switch auxiliary contact must be connected to UPS related input port for status monitoring).

UPS INPUT: RECTIFIER AND BATTERY CHARGER

POWER		kVA	400	500	600	800
Input			Triphase			
Nominal input voltage		Vac	400 VAC			
Range		%	-20/+15			
Input frequency		Hz	50 – 60			
Range			±5 / ±10 adjustable			
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			
* Certified by TÜV NORD GmbH						
DC output voltage accuracy		%	±1			
DC output voltage ripple		% rms	1			
Battery recharging characteristic			IU (DIN 41773)			
Maximum recharging current		A	60	80	80	120
- at nominal load						
- with DCM function (max current)			100	100	100	200
AC-DC converter type			PFC IGBT			
Input protection			Fuses			
Nominal current absorbed from mains (at nominal load and battery charged)		A	553	686	830	1107
Maximum current absorbed from mains (at nom. load ,max. recharging current and nominal input voltage)		A	624	784	926	1247
Sectable walk-in		sec	Sectable from 5" to 30"			
Sectable hold-off		sec	Sectable from 1" to 300"			

BATTERY

POWER	kVA	400	500	600	800
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 power (at nominal Load)	kW	373	467	560	747
Inverter input current (at nominal load-minimum Vdc)	A	753	941	1129	1507
Battery Protection (external to the UPS)		Wall mounted fuse box on request			
Battery Test		Included as standard			

UPS OUTPUT: INVERTER

POWER		kVA	400	500	600	800
Inverter Bridge			IGBT (High Frequency PWM.)			
Nominal output power (Cosφ 0.9)		kVA	400	500	600	800
Nominal output power (Cosφ 1.0)		kW	360	450	540	720
Efficiency (DC ÷ AC)	@25% load	%	> 92			
	@50% load		> 96			
	@75% load		> 96			
	@100% load		> 96			
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)						
- Cosφ 0.9 (leading and lagging)		A	580	724	870	1060
- Cosφ 1 (purely resistive load)			521	652	783	1042
Overload Capability			10 min	>100%...125%		
			1 min	>125%...150%		
			10 s	150%		
Short Circuit Current		A	695	870	1044	1390
Short Circuit Characteristic			Elect. short circuit protection, current limited at above values. 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	Triphase + Neutral
Nominal Voltage (selectable)	Vac	380-400-415
Range	%	±10
Nominal Frequency (selectable)	Hz	50-60
Range	%	±(1÷5) ±10 adjustable
Transfer mode		Without break
Transfer inverter → automatic bypass		In case of : <ul style="list-style-type: none"> - 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		Option (external): <ul style="list-style-type: none"> - Electronically controlled - No break

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. MANUAL BYPASS SWITCH IN MATCHING CUBICLE OR WALL MOUNTED BOX

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