

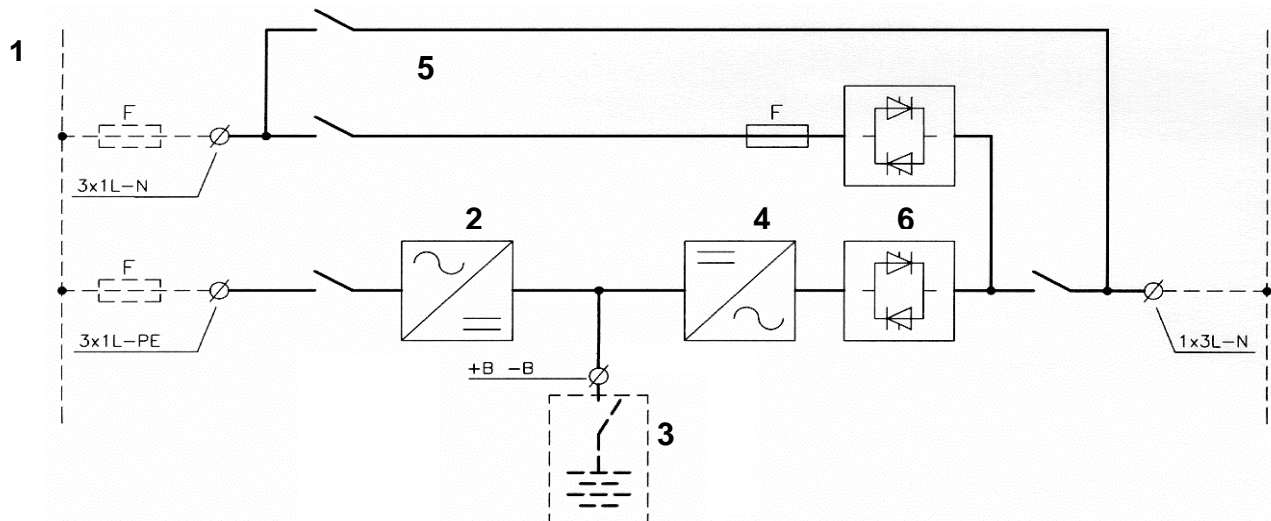
TECHNICAL DATA SHEET

B9000 200-250-300 kVA

GENERAL INFORMATION

POWER - kVA	200	250	300
UPS typology	ON LINE - Double Conversion		
Nominal output power (Cos Ø 0,8) - kVA	200	250	300
Nominal output power (Cos Ø 1,0) - kW	160	200	240
Efficiency (AC ÷ AC) - %	> 93	> 93	> 93
Heat dissipation at nominal load and voltage			
	- kW	11,2	14,0
- kcal/hour (x1000)	9,6	12,0	14,4
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	< 1000 mt (Above See Level)		
Power derating for altitude > 1000mt	According to "IEC62040-3", max 2000 m with 1% derating for +100m		
Ventilation	Forced		
Requested cooling air volume – mt ³ /h	3500	4100	4500
Audible noise level (according EN 50091)	< 62 db		
Standard battery type lead acid (n° of cells)	300		
Protection degree	IP 20		
Immunity	According "EN 62040-2" (CE marking)		
Paint	RAL 7035		
Accessibility	Front and top access for service		
Installation	Also against wall and/or side-by-side		
Dimensions (mm)	W = 1200 D = 860 H = 1900		
Weights (kg) (without battery)	870	1020	1200
Static load (kg/m ²) (without battery)	925	1085	1277
Input/output cable connection	Bottom Side (Top Side on Request)		
Transport	Base provided for forklift handling		
Transport mechanical stress	According to "IEC62040-3"		
Design standard	According to "IEC EN 62040" "ISO9000:2000"		
Free contact interface	On request		
Serial communication interface	RS232-RS485 (SNMP-Option)		
Parallel configuration	Up to 4 redundant		

BLOCK DIAGRAM



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

DESCRIPTION:

- The UPS is designed following the criteria of low environmental impact.
- The quantity of the raw material used on the magnetic components and the number of semiconductors is minimized by the means of very advanced design criteria.
- The high overall efficiency minimizes the power consumption.
- The expected battery lifetime is maximized by the very advanced digital battery charger.
- The UPS is equipped by a built in very advanced self diagnostic program indicating the problems and suggesting to the service people how to repair the faults.
- The inverter transformer prevents the direct feed-through of the battery potential into the critical load and allows a very high rejection ratio of the power supply disturbances (spikes, surges etc.).
- The high input power factor and the low harmonic level of the input current allows to reduce the dimensioning of the installation in terms of size of the cables and the circuit breakers.
- The high efficiency and input power factor reduces the costs during the normal operation of the UPS.

UPS INPUT: RECTIFIER and BATTERY CHARGER

POWER - kVA	200	250	300
Input	Threephase		
Nominal Input Voltage - Vac	400 V +10% -20%		
Input Frequency – Hz	50 - 60 Hz +/- 5 Hz		
Input Power Factor (@ 400 V)	> 0,99		
Input Current THD	< 3 %		
DC Output Voltage Accuracy	+/- 1%		
Walk-in time duration	10 s		
DC Output Voltage Ripple	1% rms		
Battery Recharging Characteristic	IU (DIN 41773)		
Temperature Voltage Compensation	On Request		
Maximum Recharging Current (at nom. load) - A	30	40	40
AC-DC converter type	IGBT		
Input protection	Fuses		
Nominal Current Absorbed from Mains (At nominal load and Battery charged) - A	250	310	375
Maximum Current Absorbed from Mains (At nom. load and max. recharging current) - A	280	350	410

DESCRIPTION:

- The Input rectifier is designed to minimize the harmonics rejected into the input mains.
- The technology is based on a full bridge 6-IGBT matrix, fully digitally controlled.
- Large input mains variations are allowed.
- The battery charger function is included on the same converter.
- The converter is designed to recharge the battery for long time autonomies.

BATTERY

POWER - kVA	200	250	300
Type	Free maintenance		
Number of Cells	300	300	300
Floating Voltage at 25°C - V	681	681	681
Minimum Discharge Voltage - V	495	495	495
Power Requested by Inverter (At nominal Load) -kW	168	210	252
Curr. Req. by Inverter (nominal load - minimum Vdc) - A	340	425	510
Battery Protection (external to the UPS)	Wall Mounted Fuse Box on Request		
Battery Test	Included as standard		

DESCRIPTION:

- The standard battery is composed 300 sealed lead cells.
- The boost charge is available as an option for other battery types.
- The battery temperature compensation is available as an option.
- Long autonomy batteries can be used.
- Different automatic and manual battery tests are available (see the operating manual).

UPS OUTPUT: INVERTER

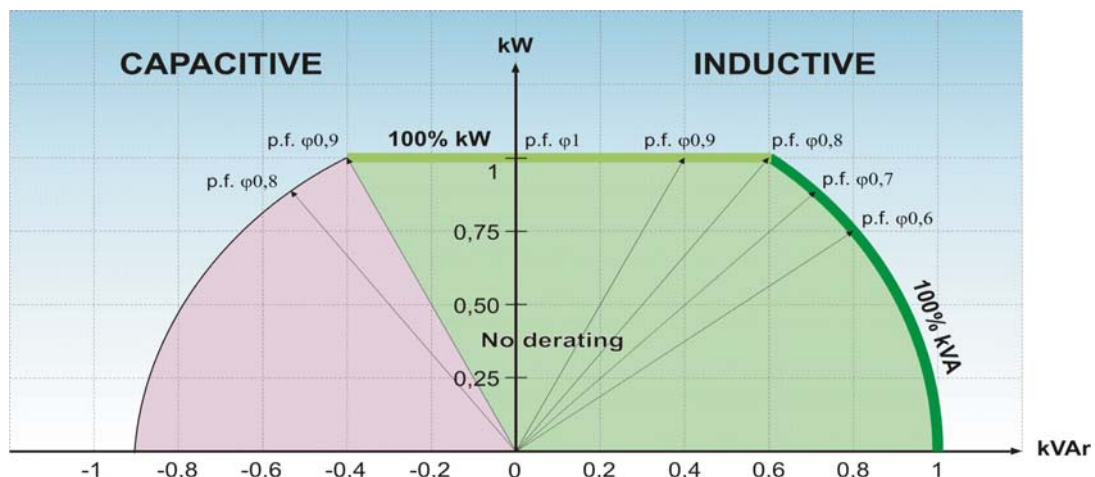
DESCRIPTION:

- The Inverter design is based on a full bridge 6-IGBT matrix, fully digitally controlled.
- The output voltage stability and the dynamic response are optimised
- The output voltage total harmonic distortion is kept very low with both linear and not linear (switching).
- The selectivity in case of short-circuit is very high and the recovery of the voltage is digitally controlled (Soft Short Recovery Loop "SSRL").
- The Inverter is designed to minimize the battery stress during the discharge.
- ECO mode available: load on by-pass and inverter on, the load transfer time is less than 5 msec.

INVERTER

POWER - kVA	200	250	300
Inverter Bridge	IGBT (High Frequency Comm.)		
Nominal output power (Cos Ø 0,8) - kVA	200	250	300
Nominal output power (Cos Ø 1,0) - kW	160	200	240
Efficiency (DC ÷ AC)	>95%		
Permissible range of load power factor	See Diagram		
Output	Triphase + Neutral		
Nominal Output Voltage - Vca (selectable)	380 -400-415		

Output Voltage Stability -Static (Balanced Load) -Static (Unbalanced Load) -Dynamic (Step Load 0÷100%÷0) -Output Volt. Recovery Time (after step load) - IEC 62040-3	+/- 1% +/- 2% +/- 5% Within 20ms Class 1		
Phase Angle -Balanced Load -100% Unbalanced Load	+/- 1 Degree +/- 2 Degrees		
Output Frequency -Hz	50 - 60		
Output Frequency Stability -Free Running Quartz Oscillator -Inverter Sync. with Mains	+/- 0,001Hz +/- 2Hz (Adjustable)		
Nominal Output Current - A - Cos ϕ 0,8 - Cos ϕ 1	290 230	360 290	430 360
Overload Capability	125% for 10 min, 150% for 1 min, 200% for 100ms		
Short Circuit Current	460	580	720
Short Circuit Characteristic	Elect. short circuit protection, current limited at 2 times nominal current. Automatic stop after 5 seconds		
Selectivity	Within ½ cicle (Fuse gl 20% In)		
Output Waveform	Sinusoidal		
Output Harmonic Distortion - Linear Load - Non Linear Load (Crest factor 3:1) - IEC 62040-3	<2% <5% Fully compliant		
Crest Factor (Non linear load)	3:1		



UPS OUTPUT: BY PASS

Automatic Static By-Pass	Electronic Thyristor Switch
Protection	Fuses
Bypass	Triphase + Neutral
Nominal Voltage - Vac	380-400-415 +/-10%
Nominal Frequency - Hz	50 - 60 +/-5Hz
Transfer mode	Without interruption
Transfer Inverter → Static By-Pass	In case of : -Static Switch test -Inverter failure -Input inv. Volt. out of limit -Output Volt. out of limit
Retransfer Static By-Pass → Inverter	- Automatic - Block on bypass after 6 commutations within 2 min. - Reset by front panel or by remote command
Overload Capability	-125% Continuously -1000% For 1 Cycle
Manual By-Pass	Standard: - Electronically controlled - No break

DESCRIPTION:

- The manual by-pass is included as a standard. The electronic control avoids the risks of power interruption in case of transfer from inverter to manual by-pass and vice-versa.

PARALLEL

Automatic Parallel Redundant Configuration	Up to four by an additional card
Parallel Configuration	Redundant N+1
Connection Type	CAN Bus Loop
Share Accuracy	10% max unbalancement
Maximum Distance Between two Units	10 mt
Overload Capability	N x 200% for 100ms
Automatic By-Pass	On each unit
Manual By-Pass	On each unit (common as option)

DESCRIPTION:

- The parallel control is full digital and acts on both active and reactive power on each output phase.
- The Loop connection permits to disconnect one of the units from the parallel string allowing the normal operation of the remaining units.

ALARMS, CONTROLS AND SIGNALS

LOCAL ON THE “SYSTEM CONTROL PANEL” :

- Synoptic diagram showing : power flow, circuit breaker status and alarms
- Battery test indicator
- LCD display
- Keyboard

REMOTE ON PC (by the means of a special test software):

- All the local indications alarms and measures
- Battery test functions
- Basic troubleshooting

FREE CONTACTS (by the means of an additional card):

- Four signals are available on free contacts.

REMOTE PANEL (by the means of an RS485 connection):

- Synoptic diagram showing : power flow, circuit breaker status and alarms
- Battery test indicator
- LCD display
- Keyboard

REMOTE ON LAN (by additional box):

- All the local indications alarms and measures are available on the following standards:
 1. SNMP
 2. Modem

OPTIONS

1. BATTERY TEMPERATURE VOLTAGE COMPENSATION
2. INSULATION TRANSFORMER ON BY-PASS
3. INPUT VOLTAGE ADAPTATION AUTO-TRANSFORMER
4. FREE CONTACTS CARD
5. SERIAL INTERFACE RS-485 for REMOTE PANEL
6. SNMP
7. MODEM
8. PARALLEL CARD
9. EXTERNAL BATTERY CABINET
10. WALL MOUNTED FUSES BOX
11. IN/OUT TOP CABLE ENTRY
12. SPECIAL PAINT