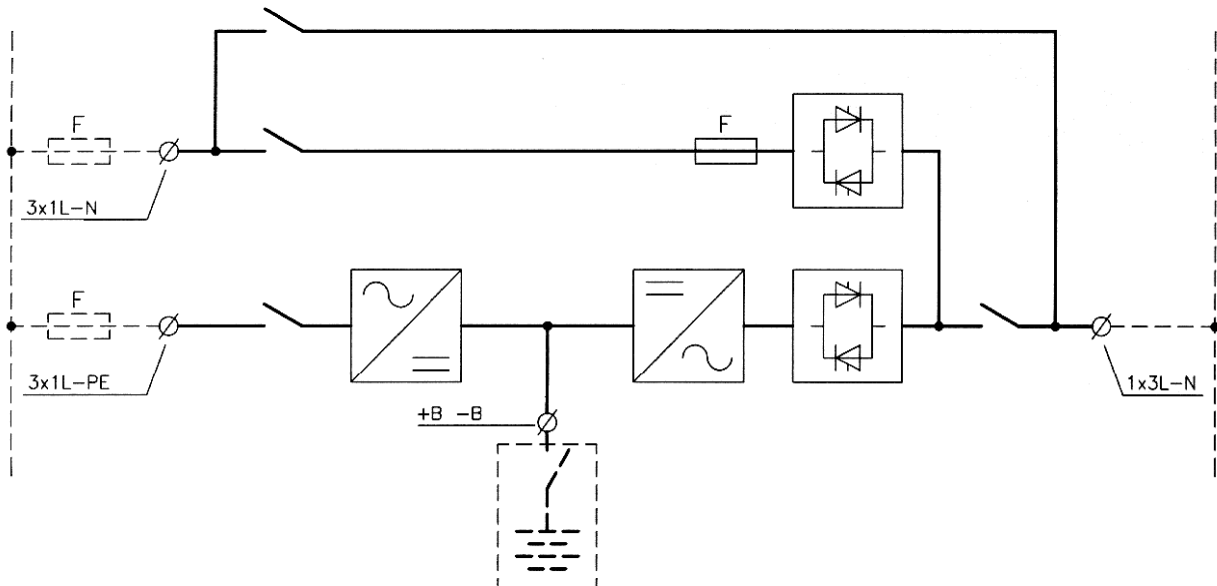


**PREMIER** 33 Series, 200:250:300kVA UPS System

General information:

<b>POWER (kVA)</b>		<b>200</b>	<b>250</b>	<b>300</b>
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	16.8
	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	(m)	<1000 (Above See Level)		
Power de-rating for altitude > 1000m		According to “IEC62040-3”		
Ventilation		FORCED		
Requested cooling air volume	(m <sup>3</sup> /h)	3500	4100	4500
Audible noise level (according EN 50091)		<62 db	<62 db	<62 db
Protection degree		IP 20	IP20	IP20
Standard battery type lead acid	(N° cells)	300	300	300
Immunity		According to “EN 50091-2” (CE Label)		
Paint		RAL 9001		
Dimensions	(mm)	W = 1200, D = 860, H = 1900		
Accessibility		Front and top access for service		
Weights (without battery)	(kg)	870	1020	1200
Static load (without battery)	(kg/m <sup>2</sup> )	843	988	1163
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 “EN50091” “IEC62040” “VISION 2000 “ISO 14001”		
Free contact interface		On request		
Serial communication interface		RS232-RS485 (SNMP-Option)		
Parallel configuration		Up to 4 redundant		

Block diagram:



Description

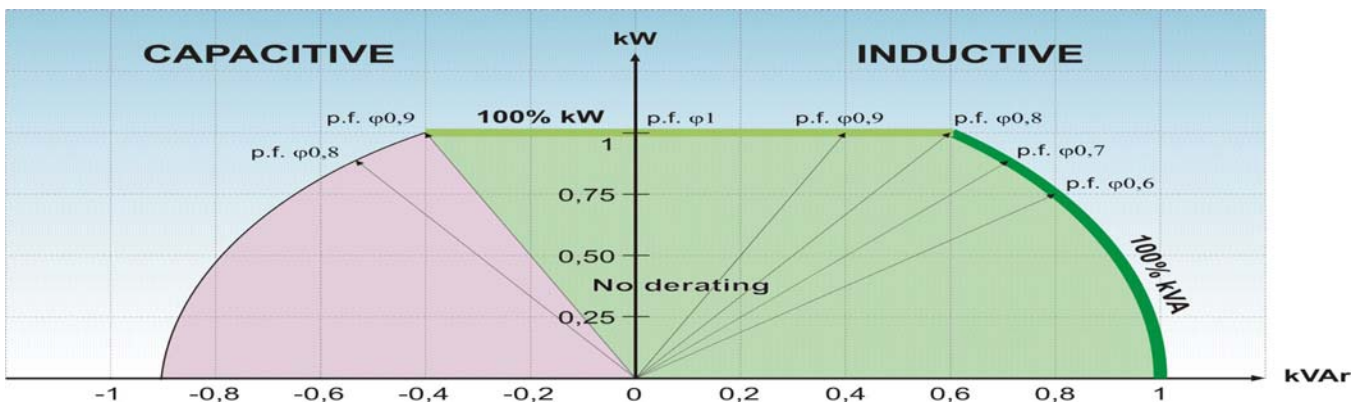
- The UPS is designed following the criteria of low environmental impact.
- The quantity of the raw material used on the magnetic components and the number of semiconductors is minimised by advanced design criteria.
- The high overall efficiency minimises the power consumption.
- The expected battery life time is maximised by the advanced digital battery charger.
- The UPS is equipped with built-in advanced self-diagnostic program indicating any problems and suggesting to the service engineers how to repair the faults.
- The inverter transformer prevents direct feed through of the battery potential into the critical load and provides 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 minimises dimensioning of the installation in terms of cable size and input circuit breakers.
- The high efficiency and input power factor reduces the operational costs during the normal operation of the UPS.

Rectifier and Battery charger:

POWER (kVA)		200	250	300
Nominal Input Voltage	(Vac)	400 (+ 10% -20%)		
Input Frequency	( Hz)	50 ~ 60 +/- 5		
Input Power Factor (@ 400V)		>0.96	>0.96	>0.96
Input Current THD	(%)	<5%	<5%	<5%
DC Output Voltage Accuracy	(%)	+/- 1		
DC Output Voltage Ripple	(% rms)	1		
Battery Recharging Characteristic		IU (DIN 41773)		
Temperature Voltage Compensation		On Request		
Maximum Recharging Current @ nominal load (A)		30	40	40
AC-DC converter type		IGBT		
Input protection		Fuses		
Nominal Current Absorbed from Mains (@ nominal load and Battery charged)	(A)	250	310	375
Maximum Current Absorbed from Mains (@ nom. load and max. recharging current)	(A)	280	350	410

Description

- The input rectifier is designed to minimize the harmonics injected 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 autonomies.



Inverter:

<b>POWER (kVA)</b>	<b>200</b>	<b>250</b>	<b>300</b>
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
Permissible range of load power factor	See Above		
Nominal Output Voltage (Vac)	380 ~ 415 (Selectable)		
Output Voltage Stability (%)	+/- 1		
- Static (Balanced Load)	+/- 2		
- Static (Unbalanced load)	+/- 5		
- Dynamic (Step Load 0~100%~0)	Within 40 msec		
- Output Volt. Recovery Time (after step load)			
Phase Angle (°)	+/- 1		
- Balanced Load	+/- 2		
- 100% Unbalanced Load			
Output Frequency (Hz)	50 – 60		
Output Frequency Stability (Hz)	+/- 0.001		
- Free Running Quartz Oscillator	+/- 2 (Adjustable)		
- Inverter Sync. with Mains			
Nominal Output Current (A)	290 360 430		
- Cos Ø 0.8	230 290 360		
- Cos Ø 1.0			
Overload Capability (%)	125% for 10 Minutes 200% for 100 msec		
Short Circuit Current (A)	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 cycle (Fuse gl 20% In)		
Output Waveform	Sinusoidal		
Output Harmonic Distortion (%)	<2		
- Linear Load	<5		
- Non Linear Load (Crest factor 3:1)	Fully compliant		
- IEC 62040-3			
Crest Factor (Non-linear load)	3:1		
Max. DC current absorbed from inverter during battery discharge (A) (@ 495VDC and nominal power)	340	425	510

## 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 non-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 minimise the battery stress during the discharge.
- ECO mode available: load on by-pass and inverter on, the load transfer time is less than 5ms.

## By-pass:

Automatic Static By-Pass	Electronic Thyristor Switch
Protection	Fuses
Nominal Voltage (Vac)	380 ~ 415 3P+N +/-10%
Nominal Frequency (Hz)	50 ~ 60 +/-5
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	-200% Continuously -1000% For 1 Cycle
Manual By-Pass	Standard: - Electronically controlled - No break

## Description

- The manual by-pass is included as standard. The electronic control avoids the risks of power interruption during 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 on N
Connection Type	CAN Bus Loop
Share Accuracy	10% max unbalance
Maximum Distance between Two Units	10m
Overload Capability	N x 200% Continuously
Automatic By-Pass	On each unit
Manual By-Pass	On each unit (common as option)

Description

- The parallel control is fully digitally controlled and acts on both active and reactive power on each output phase.
- The loop connection enables the disconnection of one of the units from the parallel string allowing the normal operation of the remaining units.
- The CAN bus communication enables connection of the units by a DB9 standard connector.

## **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 (using special test software):**

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

### **FREE CONTACTS (using an additional card):**

- Four signals are available on free contacts

### **REMOTE ON LAN (using an 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. SNMP
6. MODEM
7. PARALLEL CARD
8. EXTERNAL BATTERY CABINET
9. WALL MOUNTED FUSES BOX
10. IN/OUT TOP CABLE ENTRY
11. SPECIAL PAINT

- ◇ Online double conversion technology
- ◇ Digital Signal Processor implementing full digital control
- ◇ Digitally controlled IGBT Bridge, minimises the harmonics reinjected into the mains reducing the harmonic distortion of the current to less than 5%
- ◇ Power factor correction technology resulting in a power factor of greater than 0.96
- ◇ The high efficiency and input power factor reduces the current consumption and operational costs, reducing cable and circuit breaker cost
- ◇ Upstream generator oversizing is not required
- ◇ Integrated advanced self-diagnostic program
- ◇ Step-by-step procedures described on the LCD display for ease of use
- ◇ Results of electrical measurement, alarm, work condition, event log and battery state are displayed real time on the LCD front panel
- ◇ Mimic flow display to show the operating status of the UPS
- ◇ Battery test included as standard
- ◇ Parallel redundant configurations of up to four units

