



LIBRA Online UPS

10-100 kVA three-phase / single-phase

10-800 kVA three-phase / three-phase

بهین صنعت
Behin Sanat Power Solutions
UPS Stabilizer Battery



- + DATACENTRES
- + TELECOMMUNICATION DEVICES
- + MEDICAL DEVICES
- + EMERGENCY DEVICES
- + INDUSTRIAL APPLICATION
- + TRANSPORTATION

GTEC
Quality Energy Provider

☎ ۰۲۱-۷۷۴۴۲۰۰۵

دفتر مرکزی : تهران . نارمک . خیابان جانبازان شرقی . پلاک ۱۹ . طبقه ۲

WWW.BEHIN-SANAT.COM

Product Overview



Libra Pro is available with a power range from 10 to 100kVA threephase/singlephase and 10 to 800kVA threephase/threephase, using double conversion on-line technology (VFI) with an inverter transformer for output galvanic isolation. The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges.

Standard Libra Pro is designed with thyristor's rectifier 6 Pulse up to 200kVA; to improve the input current distortion performance.

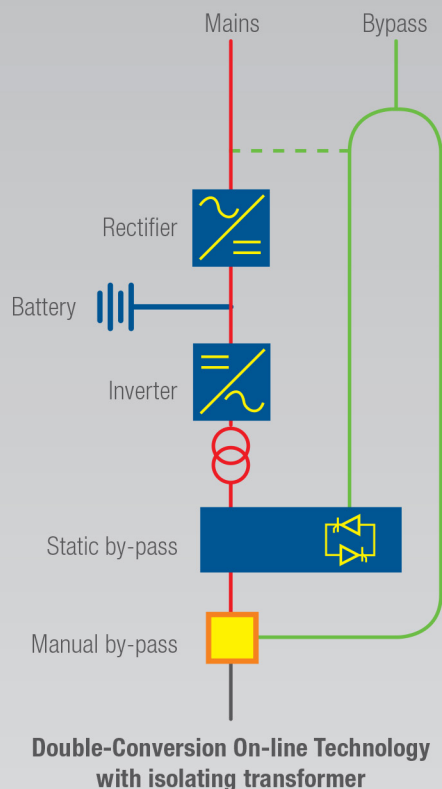
Libra Pro IGBT is a low impact source solution, because the rectifier has an IGBT technology with Power Factor Correction available from 100 to 800kVA.

Libra Pro guarantees the maximum protection for critical loads networks, security applications and industrial application thanks to its outstanding mechanical and electrical design.

- + **ISOLATING TRANSFORMER ON THE INVERTER**
- + **EXTREMELY HIGH SHORT-CIRCUIT CURRENT**
- + **SINUSOIDAL ABSORPTION (THDI% LESS THAN 3% FOR IGBT VERSION)**

Main Features

- + Reliable, filtered, stabilised and regulated sinewave output (double conversion on-line technology VFI according to EN50091-3 specifications with filters for atmospheric disturbance suppression)
- + High reliability: IGBT technology, full microprocessor control with no break – in static and manual transferring, high short-circuit current to ensure compatibility with the most difficult application (lighting, drives and industrial processes) and an isolating transformer on the inverter output
- + Low impact on the supply network: the input current distortion in Libra model from 100 to 800kVA IGBT is less than 3%. That reduces the resonance problems and the network disturbs. Besides it reduces also the design costs.
- + High level diagnostics: event log, states, measurements and alarms, available from the built-in LCD in several languages
- + Selectable power walk-in allows to limit the input rushing current
- + Maximum reliability and power availability (parallel up to 8 units for redundant (N+1) or parallel operation)
- + EPO (Emergency Power Off) input for UPS shut-down using remote emergency button
- + Front access
- + Smart battery system suitable for use with Sealed, Wet, Ni-Cd battery type
- + Back-feed protection fitted as standard



Specific Solutions

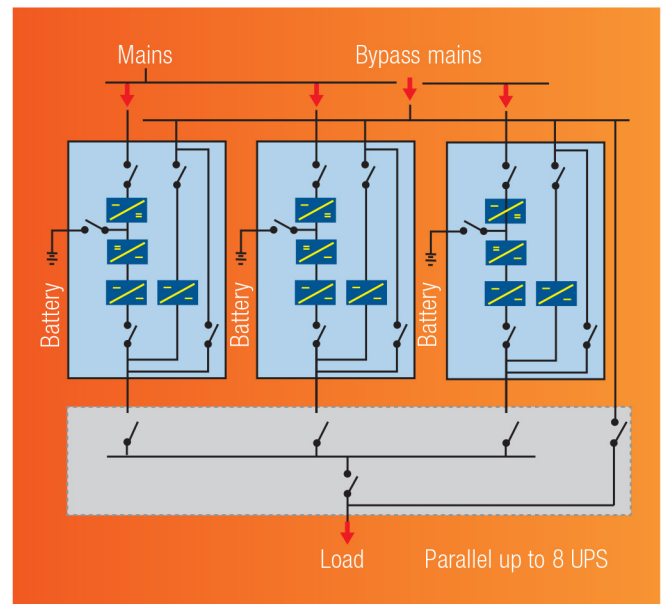
SIMPLIFIED MAINTENANCE

The wiring and all the electronic components are easily accessible from the front side. This allows to reduce the MTTR (Mean Time To Repair), that typically becomes less than 30 minutes. Almost all the main information, are available from the synoptic LCD. In addition the operating system parameters are software configurable by a local Pc that allow to adjust or improve the operating specifications.

Libra Pro can be personalized.

The operation mode is selectable by LCD display for various configurations:

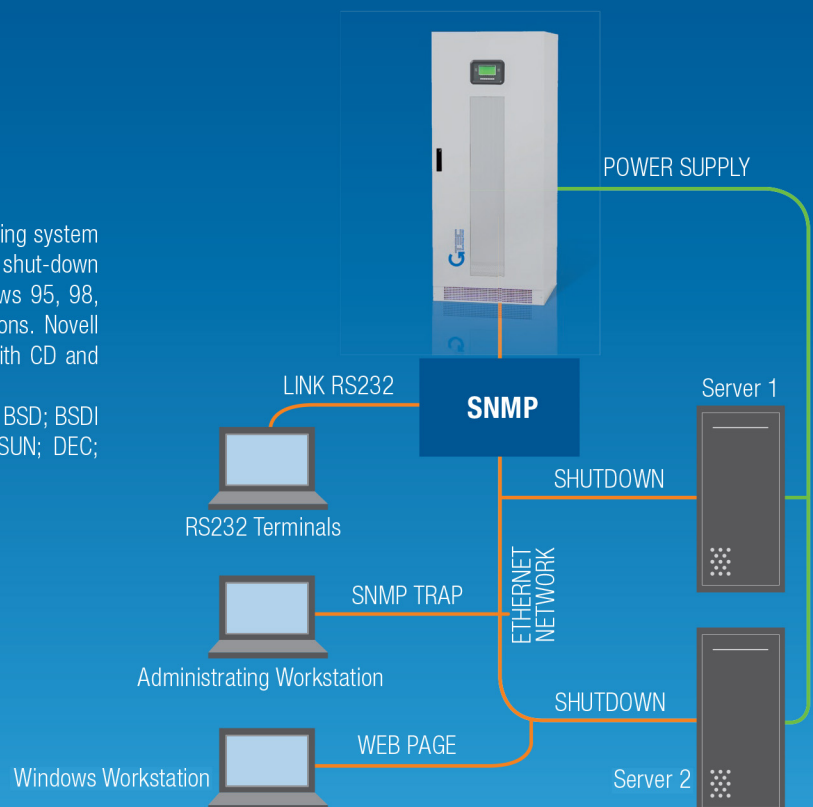
- **Single mode operation** - online
- **Parallel mode operation** up to 8 units
- **Ecomode** for energy saving - offline
- **Smart Active** - to adapt operation to the quality of main supply
- **Automatic Voltage Stabilizer** (with or without battery)
- **Frequency converter** (with or without battery)



Advanced Communication

- + Remote maintenance possibilities
- + Advanced, multi-platform communication, for all operating system and network environments: UPSmod 5 supervision and shut-down software included, with SNMP agent, for Linux, Windows 95, 98, NT 4.0, 2000, Me, XP, Mac OSx, 9.x, and latest versions. Novell operating system. The UPS is equipped as standard with CD and cable for direct connection to the PC (Plug and Play). Can also provide shut-down software for: IBM AIX; Free BSD; BSDI UNIX; BSD/OS; Unixware; SCO Openserver; Solaris; SUN; DEC; Compaq True64; HP UNIX; SGI Irix MIPS; NCR UNIX.
- + Double RS232 serial ports
- + Network adapter slot for SNMP agent
- + EPO (Emergency Power Off) shut down input contact
- + SNMP card for Ethernet Network (optional)
- + Remote LCD display panel (optional)
- + Interfaces JBUS/ModBUS and ProfiBUS (optional)

DIRECT CONNECTION WITH ETHERNET NETWORK



Technical Specifications

MODEL	LB010MP ^(B)	LB015MP ^(B)	LB020MP ^(B)	LB030MP	LB040MP	LB060MP	LB080MP	LB100MP
Rated Power (kVA)	10	15	20	30	40	60	80	100
Efficiency	> 93% in AC/AC; up to 98% in Smart Active Mode							
Dimension (mm) LxDxH	555x740x1400					800x740x1400		800X 800X 1900
Weight (kg) w/o batteries	200	220	230	290	340	440	520	650
Colour	Light Gray RAL 7035 (or RAL7016 on request)							
Protection Rating	IP20							
Noise (dB at 1m)	54		62					63
INPUT								
Rated Voltage	380-400-415Vac 3ph							
Voltage Tolerance	300 ÷ 480 Vac							
Frequency	45 ÷ 65 Hz							
Power walk-in	0 ÷ 100% in 30sec. (selectable)							
Frequency Tolerance	± 2% (selectable from 1% to 5%)							
Standard Features	Back Feed protection and splitted bypass line							
OUTPUT								
Power (kVA)	10	15	20	30	40	60	80	100
Active Power (kW)	9	13,5	18	27	36	54	72	90
Nominal Voltage (V)	220-230-240Vac 1phase							
Static Stability	± 1%							
Dynamic Stability	± 5% in 10msec							
Voltage Distortion	< 1% at linear load / < 3% at non-linear load							
Crest Factor	3:1							
Frequency stability on battery mode	0.05%							
Frequency	50 - 60 Hz (selectable)							
Overload Control	110% for 60min.; 125% for 10min.; 150% for 1min.							
BATTERIES								
Type	Pb Selead acid, Wet, Ni-Cd							
Ripple	< 1%							
Temperature Compens.	-500mV x °C							
Typical charging current	0,2 x C10							
N. cells for Pb Batteries	192							198
COMMUNICATION								
Standard	Double RS232 ports with Monitoring Software CD; Dry contacts; 2 interface intellislots							
Remote Commands	EPO and INV. OFF							
Optional	SNMP card; JBUS/ModBUS converter RS485 port; ProfiBUS converter; Multilicence							
ENVIRONMENTAL								
Room Temperature	0 ÷ 40 °C							
Humidity	< 95% (non-condensing)							
Compliance	Standards LV 2006/95/EC - 2004/108/EC - Safety IEC EN 62040-1; EMC IEC EN 62040-2; Performance IEC EN 62040-3; VFI-SS-111 Classified as IEC 62040-3							

Technical Specifications

MODEL	LB010TP ^(B)	LB015TP ^(B)	LB020TP ^(B)	LB030TP	LB040TP	LB060TP	LB080TP	LB100TP	LB120TP	LB160TP	LB200TP
Rated Power (kVA)	10	15	20	30	40	60	80	100	120	160	200
Efficiency	> 93% in AC/AC; up to 98% in Smart Active Mode										
Dimension (mm) LxDxH	555x740x1400					800x740x1400			800x800x1900		
Weight (kg) w/o batteries	210	220	230	280	330	450	600	640	650	770	810
Colour	Light Gray RAL 7035 (or RAL7016 on request)										
Protection Rating	IP20										
Noise (dB at 1m)	54		60		62			63 ÷ 68			
INPUT											
Rated Voltage	380-400-415Vac 3ph										
Voltage Tolerance	300 ÷ 480 Vac										
Frequency	45 ÷ 65 Hz										
Power walk-in	0 ÷ 100% in 30sec. (selectable)										
Frequency Tolerance	± 2% (selectable from 1% to 5%)										
Standard Features	Back Feed protection and splitted bypass line										
OUTPUT											
Power (kVA)	10	15	20	30	40	60	80	100	120	160	200
Active Power (kW)	9	13,5	18	27	36	54	72	90	108	144	180
Nominal Voltage (V)	380-400-415Vac 3phase										
Static Stability	± 1%										
Dynamic stability	± 5% in 10msec										
Voltage Distortion	< 1% at linear load / < 3% at non-linear load										
Crest Factor	3:1										
Frequency stability on battery mode	0.05%										
Frequency	50 - 60 Hz (selectable)										
Overload Control	110% for 60min.; 125% for 10min.; 150% for 1min.										
BATTERIES											
Type	Pb Selead acid, Wet, Ni-Cd										
Ripple	< 1%										
Temperature Compens.	-500mV x °C										
Typical charging current	0,2 x C10										
N. cells for Pb Batteries	198										
COMMUNICATION											
Standard	Double RS232 ports with Monitoring Software CD; Dry contacts; 2 interface intellislots										
Remote Commands	EPO and INV. OFF										
Optional	SNMP card; JBUS/ModBUS converter RS485 port; ProfiBUS converter; Multilicence										
ENVIRONMENTAL											
Room Temperature	0 ÷ 40 °C										
Humidity	< 95% (non-condensing)										
Compliance	Standards LV 2006/95/EC - 2004/108/EC - Safety IEC EN 62040-1; EMC IEC EN 62040-2; Performance IEC EN 62040-3; VFI-SS-111 Classified as IEC 62040-3										

Technical Specifications

MODEL	LB100GBT	LB120IGBT	LB160IGBT	LB200IGBT	LB250IGBT	LB300IGBT	LB400IGBT	LB500IGBT	LB600IGBT
Rated power (kVA)	100	120	160	200	250	300	400	500	600
Efficiency	> 93% in AC/AC; up to 98,5% in Smart Active Mode								
Dimension (mm) LxDxH	800x850x1900		1000x850x1900			1500x1000x1900		2100x1000x1900	
Weight (kg) w/o batteries	730	785	865	990	1090	1550	1750	2525	2700
Colour	Light Gray RAL 7035 (or RAL7016 on request)								
Protection Rating	IP20								
Noise (dB at 1m)	63 ÷ 68				70 ÷ 72				
INPUT									
Rated Voltage	380-400-415Vac 3ph								
Voltage Tolerance	300 ÷ 480 Vac (100% load)				240 ÷ 360 Vac (65% ÷ 100% load)				
Frequency	45 ÷ 65 Hz								
Power Factor	> 0,99								
Current Distortion	< 3% THDi%								
Power walk-in	0 ÷ 100% in 30sec. (selectable)								
Frequency Tolerance	± 2% (selectable from 1% to 5%)								
Standard Features	Back Feed protection and splitted bypass line								
OUTPUT									
Power (kVA)	100	120	160	200	250	300	400	500	600
Active Power (kW)	90	108	144	180	225	270	360	450	540
Nominal Voltage (V)	380-400-415Vac 3phase								
Static Stability	± 1%								
Dynamic Stability	± 5% in 10msec								
Voltage Distortion	< 1% at linear load / < 3% at non-linear load								
Crest Factor	3:1								
Frequency stability on battery mode	0.05%								
Frequency	50 - 60 Hz (selectable)								
Overload Control	110% for 60min.; 125% for 10min.; 150% for 1min.								
BATTERIES									
Type	Pb Selead acid, Wet, Ni-Cd								
Ripple	< 1%								
Temperature Compens.	-500mV x °C								
Typical charging current	0,2 x C10								
N. cells for Pb Batteries	240								
COMMUNICATION									
Standard	Double RS232 ports with Monitoring Software CD; Dry contacts (selectable); 2 interface intellislots								
Remote Commands	EPO and INV. OFF								
Optional	SNMP card; JBUS/ModBUS converter RS485 port; ProfiBUS converter; Multilicence								
ENVIRONMENTAL									
Room Temperature	0 ÷ 40 °C								
Humidity	< 95% (non-condensing)								
Compliance	Standards LV 2006/95/EC - 2004/108/EC - Safety IEC EN 62040-1; EMC IEC EN 62040-2; Performance IEC EN 62040-3; VFI-SS-111 Classified as IEC 62040-3								

Technical Specifications

LIBRAPRO IGBT PF1

MODEL	LB100 IGBTPF1	LB120 IGBTPF1	LB160 IGBTPF1	LB200 IGBTPF1	LB250 IGBTPF1	LB300 IGBTPF1	LB400 IGBTPF1	LB500 IGBTPF1	LB600 IGBTPF1	LB800 IGBTPF1
Rated Power (kVA)	100	120	160	200	250	300	400	500	600	800
Efficiency	Up to 95% in AC/AC									
Dimension (mm) LxDxH	800x850x1900		1000x850x1900			1500x1000x1900		2100x1000x1900		3200x 1000x1900
Weight (kg) w/o batteries	890	900	975	1100	1300	1520	1670	2500	2830	3950
Colour	RAL 7016									
Protection Rating	IP20 (higher levels of protection on request)									
Noise (dB at 1m)	65		68			72				
	INPUT									
Rated Voltage	400 Vac 3F-phase without neutral									
Voltage Tolerance	360 - 480 Vac (100% load)					240 - 480 Vac (65% load)				
Frequency	50 -60 Hz									
Power walk-in	0 - 100% in 30sec (selectable)									
Frequency Tolerance	From 45 to 65 Hz									
Standard Features	Back Feed protection and Splitted bypass line									
	OUTPUT									
Power (kVA)	100	120	160	200	250	300	400	500	600	800
Active Power (kW)	100	120	160	200	250	300	400	500	600	800
Nominal Voltage (V)	400 Vac 3F + N (configurable from 380 to 415 V)									
Static Stability	±1%									
Dynamic stability	±5%									
Voltage Distortion	≤ 1% at linear load					≤ 3% at non-linear load				
Crest Factor	3 : 1									
Frequency stability on battery mode	0.05%									
Frequency	50 - 60 Hz (selectable)									
Overload Control	110% for 60 min; 125% for 10 min; 150% for 1 min									
	BATTERIES									
Type	Pb Selead acid, Wet, Ni-Cd									
Ripple	Approx 0									
Temperature Compens. (V/°C)	-500mV x °C									
Typical charging current	0,2 X C10									
N. cells for Pb Batteries	from 222 to 258									
	COMMUNICATION									
Standard	Double RS232 ports with Monitoring Software CD; Dry contacts (selectable); 2 interface intellislot									
Remote Commands	EPO and INV. OFF									
Optional	SNMP card; Jbus/ModBUS converter RS485 port; ProfiBUS converter; Multilicence									
	ENVIRONMENTAL									
Room Temperature	0 ÷ 40 °C									
Humidity	<95% (non-condensing)									
Compliance	Standards LV 2006/95/EC - 2004/108/EC - Safety IEC EN62040-1; EMC IEC EN 62040-2; Performance IEC EN 62040-3; VFI-SS-111 Classified as IEC 62040-3									

G-Tec Service

G-TEC Service, our technical assistance facility, employs highly trained engineers able to provide a reliable sales assistance service.

A dedicated **CALL CENTRE** for connection to the G-TEC Service organisation. G-TEC Service personnel are always on hand and happy to provide advice and assistance regarding the installation, maintenance, fault finding and repair of UPS equipment.

G-TEC Service can provide assistance during commissioning and start-up of the UPS equipment on-site with additional training of site personnel during handover.

MAINTENANCE CONTRACTS can be provided by G-TEC Service Partners to minimise response times and reduce the cost of

repairs. Contracts range from periodic inspections to comprehensive cover including labour and materials.

FAST & READY: fast repair on site is guaranteed thanks to the use of state-of-the-art UPS technology and the professionalism of the G-TEC Service personnel and Authorised Assistance Centres.

G-TEC Service guarantees that failed parts are replaced with original ones and are tested and updated in order to maintain the safety, reliability and operating characteristics of the UPS system.



www.gtec-power.eu



www.gtec-power.eu

G-Tec Europe srl

Strada Marosticana, 81/13

36031 Povolara (VI), Italia

Tel. +39 0444.361321 - Fax +39 0444.365191

info@gtec-power.eu

