

DESIGN – PRODUCTION – SALES – ASSEMBLY – SERVICE  
RENEWABLE AND DC&AC RESERVE  
BACKUP POWER SUPPLY SYSTEMS

## MODULAR INTEGRATION SYSTEM DC/AC/DC

### series SBN – DC/AC/DC

INPUT NOMINAL VOLTAGE	24 Vdc, 48 Vdc, 110 Vdc, 125 Vdc, 220 Vdc
OUTPUT NOMINAL VOLTAGE AC I	120 Vac, 230 Vac, 400 Vac
OUTPUT NOMINAL VOLTAGE DC II	24 Vdc, 48 Vdc, 110 Vdc, 125 Vdc, 220 Vdc
OUTPUT NOMINAL VOLTAGE DC III	24 Vdc, 48 Vdc, 110 Vdc, 125 Vdc, 220 Vdc



## Let`See What We Do?

Modular Integration Systems DC/AC/DC gives different backup power for AC and DC power consumption, with required energy level also. The power from inside battery changed by modular inverter to AC power (single or three phase) and by DC/DC converter changed to required range of DC voltage, during black out from distribution mains.

ALBAT'S Modular Integration Systems DC/AC/DC with its Modular design represents a perfect solution for a wide range application in the:

- Railways,
- Energetics,
- Industrial and
- Telecommunication market.

## Main Features:

- Input AC voltage from 150 V to 265 Vac
- Input DC voltage 24 V, 48 V, 110 V, 220 Vdc
- Single phase system for output AC voltage
- Three phase system for output AC voltage
- Output DC voltage for consumption: 12 V, 24 V, 36 V, 48 V, 60 V, 110 V, 120Vdc, 220 Vdc
- Switched-mode rectifier
- Internal static switch
- Manuel bypass
- 19" Rack design
- Modular design
- Digital controller
- Internal battery

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## Availability:

- N+1 redundancy
- Hot swap conception
- Galvanically isolated
- Energy save via sleep mode
- Temperature controlled charging
- Battery test during operation
- Local and remote control
- LVDB system protection battery
- Over voltage protection for system and modules
- Enable the additional power extension

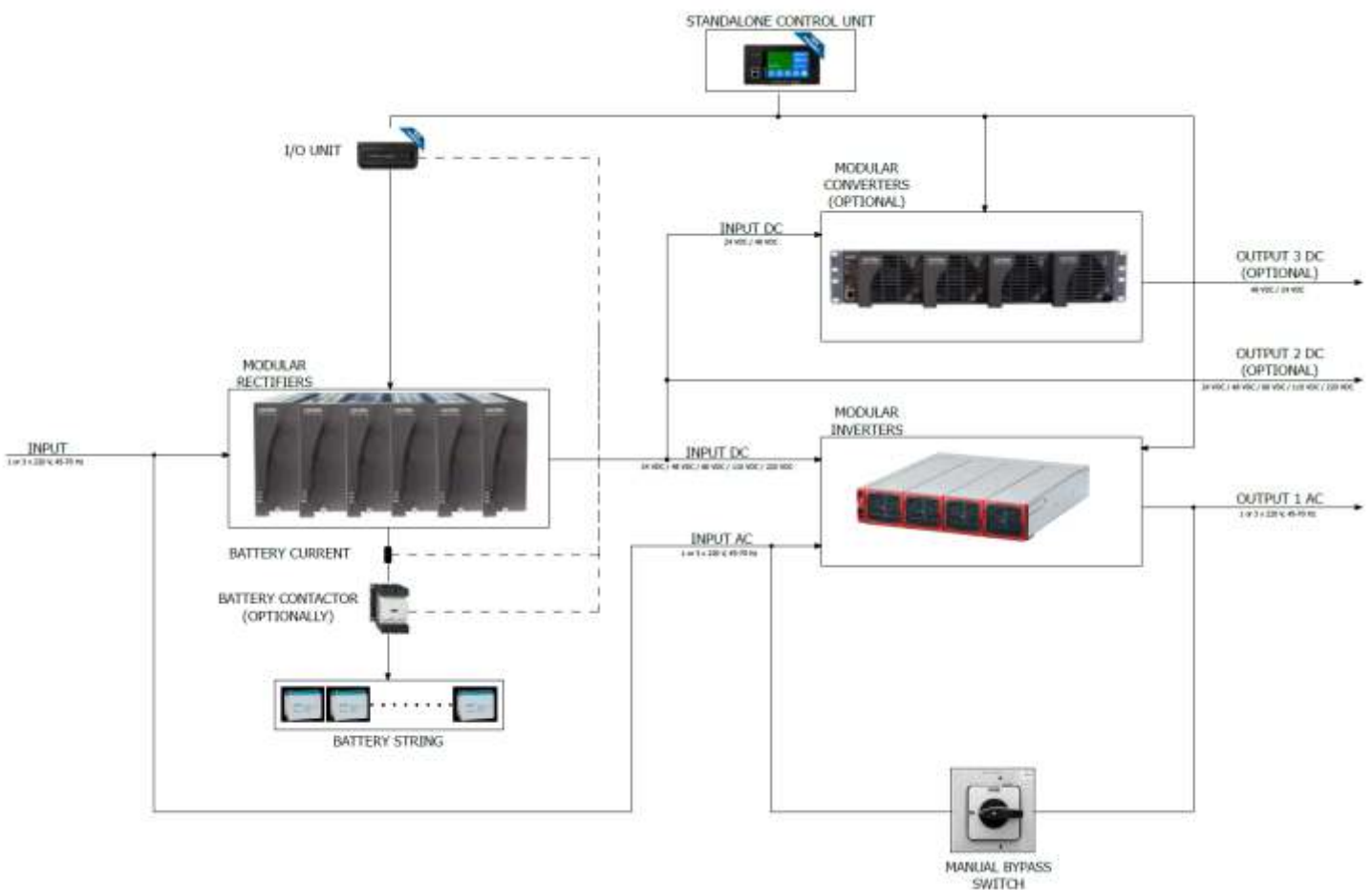
## Economic Efficiency:

- High performance beside low volume and weight
- High efficiency, power factor 0,99
- Suitable for lead VRLA AGM/GEL batteries
- All-inclusive system

ALBAT provide completely Design by your technical request, Production, Assembly and Service in warranty and after-warranty period.

The production process is in accordance with the standards ISO 9001:2008 and ISO 14001:2004.

All products are in compliance with IEC and EN standards.



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## MODULAR INTEGRATION SYSTEM DC/AC/DC

### Technical Specification

DC INPUT					
Nominal voltage Vdc	24	48	60	110	220
Voltage range Vdc	19 to 35	40 to 60	48 to 72	90 to 160	170 to 300
AC INPUT					
Nominal voltage Vac	120 / 220 / 230 / 240 V 1PH or 3PH				
Voltage range Vac	150 to 265				
Power Factor %	> 99				
Frequency Hz	50 / 60				
Frequency range Hz	47 to 63				
AC OUTPUT I					
Nominal power per Module VA / W	1500 / 1200	2500 / 2000			
Nominal power per Shelf VA / W	6000 / 4800	10000 / 8000			
Max Power per System kW	Up to 225 kVA in 3 enclosures of 75 kVA each / Per technical request / Parallel function of Modules / Shelves				
Height per Shelf U	2				
Overload capacity %	150 % in 15 seconds, 110 % permanent within T° range				
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive				
Nominal voltage Vac	120 / 230 / 400				
Nominal frequency Hz	50 or 60				
Frequency accuracy %	0,03				
THD %	√1,5				
Crest factor at nominal power	2,8 : 1	3 : 1			
Short circuit clear up capacity	10 x In for 20 msec – Available while mains is available at AC input port With magnitude control and management				
Short circuit current after clear up capacity	2,1 In during 15 sec and 1,5 In after 15 sec				
Max voltage interruption	0 sec				
Total transient voltage duration	0 sec				

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DC OUTPUT II *																
Nominal Voltage Vdc	24			48						110		125		220		
Operation Voltage Vdc	20	21	43	42	42	42	44	44	42	90	90	180	180			
	to 29	To 29	to 58	to 58	to 60	to 58	to 58	to 58	to 60	to 180	to 160	to 320	320			
Power per Module kW	0,4	3,1	0,3	0,65	1,0	1,2	2,0	2,4	4,0	1,1	4,4	1,1	4,4	1,1	4,4	
Power per Shelf kW	2,0	15,5	0,9	3,25	5,0	6,0	8,0	9,6	20,0	6,6	22	6,6	22	6,6	22	
Max Power per System kW	Per technical request / Parallel function of Modules / Shelves															
Height per Shelf U	2	4	1	2	4	1	2	1	4	4	4	4	4	4	4	
Load regulation %	Static $\leq \pm 0,5$															
Line regulation %	Static $\leq \pm 0,1$															
CONTROLLER																
Features	High resolution color touchscreen LCD display for local access; Embedded web based UI accessed via Ethernet using internet browser; Built in multi-tone speaker; LED indicators (green, amber, red);															
System	User management – Admin + 5 users with configurable access rights; Advanced inventory management with custom inventory items; User configurable alarms and custom data; Advanced equation editing with timers and counters; Software, firmware, and configuration file upgrade management; CAN Bus interface to power electronics and peripherals; Custom data logging and performance monitoring; Power save feature for optimizing system efficiency;															
Communication ports	2 x Ports for communication with shelves; 2 x Ethernet ports front and rear; 2 x USB ports front and rear;															
Inputs (possibility of extension)	4 x Voltage; 4 x Shunt; 4 x Temp; 8 x Digital; 12 x Relay;									2 x Voltage; 1 x Shunt; 2 x Temp; 4 x Digital; 6 x Relay;						
MECHANICAL																
Cabinet dimension	600 x 600 x 2000 mm + 100 mm / or different per technical request															
Cabinet protection	IP 21 or IP 54 or IP 65 (standard or AIR-conditioned or Seismic resistance) / or different per technical request															
Installation	Indoor / Outdoor															
PERFORMANCE / FEATURES – INVERTER PART																
Cooling / Isolation	Forced / Doubled															
Efficiency EPC / ON Line %	> 95,5 / 89,5			> 96 / 91									> 95,5 / 92,5			
Dielectric strenght DC/AC	4300 Vdc															
Alarms output / supervision	Dry contacts on shelf / Standard USB port and MODBUS: Display / TCP-IP															
ENVIRONMENTAL – INVERTER PART																
Standard temperature °C	-20 to +50															
Humidity %	0 to 95 RH non-condensing															
Elevation m	Up to 1500 / derating > 1500 -0,8 per 100 m															
AGENCY COMPLIANCE – INVERTER PART																
Safety	EN 62040-1															
EMC / Emission	EN 55022 A			EN 55022 B			EN 55022 A			EN 55022 B						
EMC / Immunity	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8															
ENVIRONMENTAL – RECTIFIER PART																
Standard temperature °C	-40	-40	-40	-40	-40	-40	-40 to +55				-40 to +55					
	to +50	to +65	to +70	to +50	to +55	to +65										
Extended temperature °C	-40 to +85 (de-rated)						-40 to +75 (de-rated)									
Humidity %	0 to 95 RH non-condensing															
Elevation m (de-rated more than 2000)	-500	-500	-500	-500	-500	-500	-60	-500	-500	-500						
	to 3000	to 4000	to 3000	to 3000	to 4000	to 3000	to 4000	to 3000	to 4000	to 2800						
AGENCY COMPLIANCE – RECTIFIER PART																
Safety	CSA C22.2 NO 60950-1-03; CE MARKED; UL 60950-1 1th edition; IEC/EN 60950-1;															
EMC / Emission	CFR47 PART 15 CLASS A; ICES-03 CLASS A; EN 55022 CLASS A; C-TICK; EN 61000-3-2; EN 61000-3-3;															
EMC / Immunity	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; ANSI/IEEE C62.41 CAT B3															

\* DC OUTPUT III: optional with Converter DC/DC

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