

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

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

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.

ALBAT d.o.o. Sarajevo
 Pavla Lukaca 7, 71000 Sarajevo, B&H

tel.: +387 +33 764 075 • +387 +33 764 076 • fax: +387 +33 764 077

albat@albat.ba • www.albat.ba

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															
DC OUTPUT II *																
Nominal Voltage Vdc	24				48						110		125		220	
Operation Voltage Vdc	20 to 29	21 To 29	43 to 58	42 to 58	42 to 60	42 to 58	44 to 58	44 to 58	42 to 60	90 to 180	90 to 160	90 to 160	180 to 320	180 to 320	180 to 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 to +50	-40 to +65	-40 to +70	-40 to +50	-40 to +55	-40 to +65	-40 to +55			-40 to +55
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 to 3000	-500 to 4000	-500 to 3000	-500 to 3000	-500 to 4000	-500 to 3000	-60 to 4000	-500 to 3000	-500 to 4000	-500 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

MODULAR INTEGRATION SYSTEMS DC/AC/DC

FUNCTIONAL DIAGRAM

