gravitas
ENERGY SYSTEMS

UNIPOWER TELECOM

SABRE Series Inverter System

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SABRE Series
Inverter Power System

KEY FEATURES

- Ultimate Power Density
- Hot-Plug N+1 Operation
- Highly Configurable
- Expandable to 24kVA
- “All Master” Dynamic Mechanism
- System Status Display
- Maintenance Bypass
- AC Load Distribution

The Gravitas Energy Systems **SABRE** is an integrated inverter power system, including, inverter, static transfer switch, controller, and remote communications interface modules.

The modular design and N+1 redundant capability of **SABRE** allows the system to be configured for a variety of complex Telecommunication and Industrial power requirements.

An “All Master” dynamic mechanism prevents interruption to critical loads from one or more inverter module failures.

SABRE’s static transfer switch provides automatic instantaneous load transfer, ensuring secure uninterrupted operation of sensitive electronic equipment.

The microprocessor controller gives real-time system status via an LCD display and LEDs indicators and also allows settings to be programmed through the front panel. With the communication interface module installed, it is possible to control and monitor the system remotely.

INV1048 / INV1548 INVERTER MODULES

The SABRE Series inverter modules utilize advanced power electronic techniques for reduced size, achieving power densities 5.57W/inch³ for the INV1048 and 8.36W/inch³ for the INV1548.
With dimensions of 1.59”(40.5mm) height x 8.46”(215mm) width x 10.63”(270mm) depth these units install in pairs into a 1U high 19” rack-mountable ETSI 300mm power shelf.

- Pure sine wave
- Hot-swap replacement in shelf
- High efficiency, >89%
- Smart fan speed control
- Wide operation temperature range, -20-70°C
- DSPdesigned
- N+X redundancy system, load sharing < 5%
- Lower audible noise < 55dBA
- High power density
- Emergency Power Off function embedded
- CAN Bus interface embedded
- -48Vdc Telecom system application

STS5048 STATIC TRANSFER SWITCH MODULE

The SABRE Series Static Transfer Switch module increases system reliability by automatically switching between the inverter output and the utility supply. The STS5048 can be programmed so that the system operates in a standby backup mode were the utility is the normal source of supply or alternatively the system can be the normal source of supply with automatic switchover to the utility in the event of system failure.

- Universal input range
- Hot-swap replacement in shelf
- Back-feed protection
- Redundant fan design
- Redundant power supply design
- Fast transfer time, typically less than 1/4 cycle
- Wide operation temperature range, -20-70°C
- Lower audible noise <55dBA
- Emergency Power Off function embedded
- No-cross connect
- Optional maintenance bypass switch function
- CAN Bus interface embedded
- Operation Priority Setup of transfer side by setting in Controller Module

IFC2000 COMMUNICATIONS INTERFACE MODULE

The SABRE Series Communications Interface Module provides system connection to a computer via RS232, RS485 or USB for the purposes of remote monitoring, control or programming. Remote PC based software provides a user friendly GUI interface.
An additional SNMP module (integral to the INVR1U2CS-S STS/Controller shelf) provides alarm traps over a TCP/IP Ethernet interface.

DSC2048 CONTROLLER MODULE

The SABRE Series Controller, allows the user to monitor real-time system status such as output voltage, output current, alarm status, and also allows system parameters, to quickly be changed with the touch of a few keys on the front panel. With the Communications Interface Module installed remote access can be made with a PC over a variety of interfaces.

- Compact design (IRU Height)
- Dry contact
- RS-232 (with IFC2000)
- RS-485 (with IFC2000)
- SNMP (included in INVR1U2CS-S)
- USB (with IFC2000)
- CAN Bus interface embedded
- Dry contact output is programmable
- Hot swappable
- RealTime Clock embedded
- LCD and LED indicator
- Audible alarm function embedded

DPMBS2U MANUAL BYPASS / DISTRIBUTION MODULE

The SABRE Series manual bypass and power distribution module enables the user to manually switch between inverter output or utility output and to override the STS module for maintenance purposes. A mechanical interlock between the DPMBS2U and the STS module ensures that AC to the load cannot be inadvertantly interrupted.

The DPMBS2U provides two means of distributing AC to the load as standard; as a single bulk output or via eight IEC320 or NEMA outlet sockets with individual Magnetic Circuit Breakers.

- 100A Bypass switch
- Enables hot-swap of STS module
- 100A Bulk output on terminal block
- AC utility can be isolated via MCB
- 100A Master MCB
- 6 x NEMA 5-15 + 2 x NEMA 50-20 outlets (-N)
- 6 x IEC320-C13 + 2 x IEC320-C20 outlets (-E)
- Individual MCBs for each circuit

PDUAC1U DISTRIBUTION MODULE

For applications where the manual bypass function is not required the PDUAC1U provides similar distribution capability to the DPMBS2U; but in only 1U rack height.

- Compact design (IRU Height)
- Bulk Output Terminal Block
- NEMA 5-15 outlets with 15A MCBs (-N)
- IEC320-C13 outlets with 10A MCBs (-E)
- 100A overall capacity

INVERTER MODULE SPECIFICATION

DC INPUT	
Nominal Voltage	48Vdc
Operating Range	40.5Vdc - 58Vdc for 48Vdc System
Input Protection	Reverse Polarity Protection
Psophometric Noise	<1.0mV ITU-T 0.41 (16.66-6000Hz)
Peak to Peak Noise	150mV up to 100MHz
AC OUTPUT	
Output Waveform	Pure sine wave
Output Power	1000 VA/800W - INV1048 & INV1048H, 1500 VA/1200W - INV1548 & INV1548H
Power Factor	0.8 maximum lagging or leading
Nominal Output Voltage	110/115/120Vac - INV1048, INV1548, 208/220/230/240Vac - INV1048H, INV1548H
Output Voltage Variation	Maximum ±2%
Frequency	50/60Hz ±0.5%, programmable
Crest Factor	3:1
THD	<3%, linear load, <5%, non-linear load
Efficiency	>89%
Dynamic response	Maximum ±10%
Over load protection	1.5x Inom >20s, 1.25x Inom temperature controlled

STANDALONE INVERTER APPLICATIONS

MODEL NUMBER	FUNCTIONAL DESCRIPTION
INV1048	Inverter Module - 1000VA/800W, 120VAC/60Hz.
INV1048H	Inverter Module - 1000VA/800W, 230VAC/50Hz.
INV1548	Inverter Module - 1500VA/1200W, 120VAC/60Hz.
INV1548H	Inverter Module - 1500VA/1200W, 230VAC/50Hz.
INVR1U2	Inverter Shelf - 1RU high x 19”/23” rack-mount with bulk output and parallelable. For 120VAC or 230VAC.
INVR1U2-LN	Inverter Shelf - 1RU high x 19”/23” rack-mount with 2 x NEMA 5-15 outlets. For 120VAC only.
INVR1U2-LE	Inverter Shelf - 1RU high x 19”/23” rack-mount with 2 x IEC60320-C13 outlets. For 120VAC or 230VAC.

INVERTER SYSTEM APPLICATIONS

MODEL NUMBER	FUNCTIONAL DESCRIPTION
INV1048	Inverter Module - 1000VA/800W, 120VAC/60Hz (programmable to 50Hz using controller).
INV1048H	Inverter Module - 1000VA/800W, 230VAC/50Hz (programmable to 60Hz using controller).
INV1548	Inverter Module - 1500VA/1200W, 120VAC/60Hz (programmable to 50Hz using controller).
INV1548H	Inverter Module - 1500VA/1200W, 230VAC/50Hz (programmable to 60Hz using controller).
INVR1U2	Inverter Shelf - 1RU high x 19”/23” rack-mount, parallelable.
STS5048	Static Transfer Switch Module - 120VAC/230VAC, 50A max.
DSC2048	System Controller - Provides system monitoring/setup via front panel plus alarm relay outputs.
IFC2000	Communications Module - PC communications for DSC2048 over RS232 & USB.
INVR1U2CS	Controller/STS/IFC Shelf - 1”U high x 19”/23” rack-mount, holds STS5048, DSC2048 & IFC2000.
INVR1U2CS-S	Controller/STS/SNMP Shelf - 1”U high x 19”/23” rack-mount, holds STS5048, DSC2048. Pre-configured with IFC2000 & SNMP Alarm Trap module (requires DSC2048 for full functionality).
DPMBS2U-N	Manual Bypass/PDU - 2RU high x 19”/23” rack-mount, 100A manual bypass switch, 6 x NEMA 5-15 outlets with 15A MCBs, 2 x NEMA 5-20 outlets with 20A MCBs, bulk output connector, 100A master MCB. For 120VAC operation only.
DPMBS2U-E	Manual Bypass/PDU - 2RU high x 19”/23” rack-mount, 100A manual bypass switch, 6 x IEC320-C13 outlets with 10A MCBs, 2 x IEC320-C19 outlets with 20A MCBs, bulk output connector, 100A master MCB. For 120 or 230VAC operation.
PDUAC1U-N	PDU Module - 1RU high x 19”/23” rack-mount, 6 x NEMA 5-15 outlets with 15A MCBs, bulk output with 100A MCB. For 120VAC operation only.
PDUAC1U-E	PDU Module - 1RU high x 19”/23” rack-mount, 6 x IEC60320-C13 outlets with 10A MCBs, bulk output with 50A MCB. For 120 or 230VAC operation.

Detailed specifications for all modules from the SABRE Series can be found in the Installation and Operatating Manual, which is available on our WEB site **www.unipowertelecom.com**

SABRE Series Inverter Standby System

Serving OEMs with:

Front-Ends
Single Output Power Supplies
Multiple Output Power Supplies
Customized Power Solutions

Serving Communications Customers with:

Rectifiers
Distribution Panels
Inverters
DC/DC & Bus Converters
Compact Power Systems
Energy Systems

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