Light Support Power Systems IPS Single Phase Series

Interruptible emergency lighting inverter system 1.5KVA –16.7KVA

Features

- 98% efficient at full load
- PWM/IGBT technology
- Self-testing/Self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- Standard internal bypass switch
- RS232 communication port
- Micro-processor controlled
- Automatic event and alarm log
- 90 min. standard run time
- Generator compatibility
- Available in Y or Δ input configuration
- Custom voltages available
- Automatic event, test and alarm log
- LCD display
- Reduced footprint
- Maintenance free standard batteries
- Forced air cooling during emergency only

Electrical/ mechanical characteristics[4] (data provided for standard lead calcium batteries)[1,4]

Power rating[1] kVA=kW	Effic. at full load	Max. input current (a) 120V	Max. input current (a) 277V	Heat loss in normal mode (BTU/HR)	Batt. VDC	Batt. A	No. of batt.	UPS cabinet W"	UPS cabinet H"	UPS cabinet D"	Battery cabinet dimensions[2,3] W"	Battery cabinet dimensions[2,3] H"	Battery cabinet dimensions[2,3] D"	No. of batt. cab	Batt. cab. weight lbs (empty)	UPS cab. weight lbs	Batt. weight lbs	Total system weight lbs
1.5	98	16	7	102	48	39	4	30	47	25	N/A	N/A	N/A	N/A	N/A	296	296	546
2.25	98	24	11	153	72	38	6	30	47	25	N/A	N/A	N/A	N/A	N/A	444	444	709
3	98	32	14	204	96	38	8	30	47	25	N/A	N/A	N/A	N/A	N/A	592	592	887
3.75	98	39	17	255	120	37	10	30	47	25	N/A	N/A	N/A	N/A	N/A	740	740	1045
5	98	50	22	340	144	40	12	30	47	25	N/A	N/A	N/A	N/A	N/A	888	888	1203
6	98	63	27	408	180	40	15	30	47	25	30	47	25	1	210	1110	1110	1670
8	98	84	36	544	240	39	20	30	47	25	30	47	25	1	232	1480	1480	2087
10	98	105	45	680	144	82	24	30	47	25	30	47	25	2	420	1776	1776	2631
12.5	98	131	57	850	180	82	30	30	47	25	30	47	25	2	420	2220	2220	3105
16.7	98	174	76	1136	240	80	40	30	47	25	30	47	25	2	464	2960	2960	3954

[1] Consult factory for 20 year type batteries or for wet nickel cadmium batteries
[2] Batteries are installed in the electronics cabinet for 1.5 to 5kVA systems
[3] Battery cabinets are stackable. To be installed on the right side of the electronics cabinet
[4] Special voltages or batteries may change the size, weight or number of cabinets

Ordering format

System type	Battery type	Input voltage[3]	VA/W rating	Output voltage[3]	Run time[2]	Input breaker	RS232 port	Output breakers[4]	Options[1]	
IPS	**SC**= Sealed Lead-Calcium **NC**= Wet Nickel-Cadmium	120 208 240 277	G- 1500 K- 2250 L- 3000 M- 3750 P- 5000 R- 6000 S- 8000 T- 10000 U- 12500 V- 16700	120 277 208 120/240 120/277	**90**	**ICB**	**RS232**	**OCBxxxx-** No trip alarm **OCAxxxx-** With trip alarm	**20Y**- 20 yr sealed batteries **12HR**- 12 hr fast recharge **MBYP**- Internal bypass switch **EMBP**- External bypass switch[5] **RMP**- Remote metering panel **RSAP**- Remote summary alarm panel **DCS**- Dry summary alarm contacts **INVON**- Inverter on dry contacts	**VTD**- Not variable **MOD**- External modem **FAX**- Fax modem **BPR**- Bypass relays **DIAL**- Autodialer **SEIS**- Seismic mounting **ZONEM-** Zone monitoring **BATM**- Battery cycle warranty monitor

Example: IPS-SC120S120-90-ICB-RS232-OCB0420-DCS-20Y

[1] See page 169 for options description
[2] Other run times available
[3] Special voltages may change the size, weight or number of cabinets
[4] Max. 12 unsupervised single pole positions or 8 with trip alarm. For more output breakers please consult factory. See page 169 for output breakers option details.
[5] External bypass switch is not compatible with integrated output circuit breakers. Input/output voltage has to be the same

Specifications

GENERAL

Design

Stand-by. PWM inverter type utilizing IGBT technology with 50ms transfer time

Control

- Microprocessor controlled, 2 x 20-character display with touch pad controls & functions
- 5 LED indicators & alarm with ring-back feature

Metering

Input & Output Voltage, Battery Voltage, Battery & Output Current, Output VA, temperature, inverter wattage

Communications

RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

120 or 277VAC 1-phase 2-wire +10% - 15%. Contact factory for all other voltages.

Input Power Walk-In

Limiting inrush current to less than 125%, 10 times for 1 line cycle

Input Frequency

- 60Hz, +/-3%, 50Hz available upon request
- Protection 60Hz, +/-3%, 50Hz available upon request
- Harmonic Distortion <10%
- Power Factor 0.5 lag/lead

ELECTRICAL OUTPUT

Voltage

120 or 277VAC 1-phase 2-wire. Contact factory for all other voltages.

Static Voltage

Load current change +/-2%, battery discharge +/-12.5%

Dynamic Voltage

- +/-2% for +/-25% load step change, +/-3% for a 50% load step change, recovery within 3 cycles
- Harmonic Distortion <3% THD for linear load
- Output Frequency 60Hz +/- 0.05Hz during emergency mode
- Inverter Overload 125% for 5 minutes
- Protection Optional Distribution Circuit Breaker
- Crest Factor 2.8

ENVIRONMENTAL CONDITIONS

Storage/Transport

- -4°F to 158°F (-20°C to 70°C) without batteries
- -0°F to 104°F (-18°C to 40°C) with batteries (max. 3 months at 104° F (40° C)

Operating temperature

System operates safely from 32°F to 104°F (0°C to 40°C) but optimum operation is between 68° F and 86°F (20°C to 30°C). Battery performance can be affected by temperature.

Altitude

<10,000 feet (above sea level) without de-rating

Relative Humidity

0 to 95% non-condensing

Audible noise

45 dBA @ 1m from surface in emergency mode

Cabinets - Modular design, freestanding NEMA type 1 steel cabinets powder coated for corrosion and scratch resistance. Front access design through hinged lockable doors requires only 39" front clearance and 12" top clearance. Cabinets are stackable up to 16.7kVA, if required to further reduce the footprint. Top and left side conduit entry with knockouts up to 16.7kVA. Left side only for 24kVA and up.

Inverter - Using IGBT/PWM technology the inverter converts DC voltage supplied by the batteries to AC voltage of a precise stabilized amplitude and frequency, suitable for most sophisticated electrical equipment. True sinusoidal output waveform with very low distortion (less than 3% for linear loads). Overload capability of up to 150% for 12 line cycles.

Charger - Fully automatic, temperature compensated, microprocessor controlled charger recharges fully discharged batteries in maximum 24 hours at nominal AC input voltage. AC input current limiting and over-voltage protection included.

Battery - System is provided standard with 10 year, maintenance free, sealed valve regulated, front terminals Lead-Calcium batteries. 20 years life sealed Lead-Calcium or wet nickel cadmium batteries also available. 90 min. standard discharge time at full load under normal operating temperature. Low Voltage Disconnect protection included. No special ventilation required.

Supervision - Automatic self tests consist of a 5-minute monthly and 90-minute annual function. The front-mounted control panel includes 5 LED indicators, a 2-line 20-character LCD display, a keypad to control and monitor the internal operation of the system. This allows the operator to easily "watch" system functions as they occur and check on virtually any aspect of the system's operation. Standard RS232 diagnostic interface.

Alarms - High/Low Battery Charger Voltage, High/Low AC Input Voltage, Near Low Battery, Low Battery, Load Reduction Fault, Output Overload, High Ambient Temperature, Inverter Fault, Output Fault, Optional Output Circuit Breaker Trip

Optional features - Output Circuit Breakers, Output Trip Alarms, 20 Years Sealed Batteries, 12 Hours Fast Recharge, Internal/External Maintenance Bypass Switch, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Fax/Modem, Bypass Relays, Auto Dialer, Seismic Mounting.

Factory start-up - full limited warranty conditions available upon request) Includes one additional year of warranty. See warranty conditions.

Warranty (full limited warranty conditions available upon request)

Limited manufacturer warranty is one-year, parts and labor, for system electronics or two-year with factory start-up program. Battery warranty is one-year full plus 9 years pro-rata for a total of 10 years, under normal operating conditions. System must be put in service within 6 months from ship date in order to validate warranty. 2- Consult factory for other type batteries than the standard one.

Detailed warranty terms located on **page 182 or online at: www.lightalarms.com**

Single line diagram