

Light Support Power Systems 3FTC Three Phase Series

Fast transfer emergency lighting inverter system 4.8KVA – 50KVA



Features

- 98% efficient @ 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 (stackable cabinets)
- Maintenance free standard batteries
- Forced air cooling during emergency mode only



Electrical characteristics and dimensions⁴ (data provided for standard lead calcium batteries)^{1,4}

| Power rating ¹ kVA=kW | Effic. at full load % | Max. input current (a) | | Heat loss in normal mode (BTU/HR) | Batt. VDC | Batt. A | No. of batt. | UPS cabinet | | | Battery cabinet dimensions ^{2,3} | | | No. of batt. cab | Batt. cab. weight lbs (empty) | UPS cab. weight lbs | Total Batt. system weight lbs | |
|-------------------------------------|--------------------------|------------------------|-----------|--------------------------------------|-----------|---------|--------------|-------------|----|----|---|----|----|------------------|-------------------------------|---------------------|-------------------------------|-------|
| | | 120V/208V | 277V/480V | | | | | W" | H" | D" | W" | H" | D" | | | | lbs | lbs |
| 4.8 | 98 | 17 | 7 | 326 | 144 | 39 | 12 | 30 | 47 | 25 | 30 | 47 | 25 | 1 | N/A | 535 | 888 | 1633 |
| 6 | 98 | 21 | 9 | 408 | 180 | 39 | 15 | 30 | 47 | 25 | 30 | 47 | 25 | 1 | N/A | 535 | 1110 | 1855 |
| 8 | 98 | 28 | 12 | 544 | 240 | 39 | 20 | 30 | 47 | 25 | 30 | 47 | 25 | 1 | N/A | 535 | 1480 | 2247 |
| 10 | 98 | 35 | 15 | 680 | 144 | 81 | 24 | 30 | 47 | 25 | 30 | 47 | 25 | 2 | N/A | 639 | 1776 | 2835 |
| 12.5 | 98 | 43 | 19 | 850 | 180 | 81 | 30 | 30 | 47 | 25 | 30 | 47 | 25 | 2 | N/A | 639 | 2220 | 3279 |
| 16.7 | 98 | 58 | 25 | 1136 | 240 | 81 | 40 | 30 | 47 | 25 | 30 | 47 | 25 | 2 | 210 | 639 | 2960 | 4063 |
| 24 | 98 | 84 | 36 | 1632 | 240 | 117 | 60 | 30 | 72 | 31 | 48 | 72 | 31 | 1 | 232 | 1250 | 4440 | 6390 |
| 33 | 98 | 115 | 50 | 2244 | 240 | 160 | 40 | 30 | 72 | 31 | 48 | 72 | 31 | 2 | 420 | 1250 | 6080 | 8630 |
| 40 | 98 | 139 | 60 | 2720 | 240 | 194 | 100 | 30 | 72 | 31 | 48 | 72 | 31 | 2 | 420 | 1250 | 7400 | 10150 |
| 50 | 98 | 174 | 75 | 3400 | 240 | 243 | 60 | 30 | 72 | 31 | 48 | 72 | 31 | 2 | 464 | 1250 | 9120 | 11980 |

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 | |
|-------------|--------------------------------|----------------------------|-----------------|-----------------------------|--|---------------|--------------|----------------------------------|---|---|
| FTC | SC= Sealed Lead-Calcium | 120 | G- 1500 | 120 | 90 | ICB | RS232 | OCBxxxx- No trip alarm | 20Y- 20 yr sealed batteries | MOD- External modem |
| | | 208 | K- 2250 | 277 | 12HR- 12 hr fast recharge | | | | FAX- Fax modem | |
| | | 240 | L- 3000 | 208 | MBYP- Internal bypass switch | | | | BPR- Bypass relays | |
| | NC= Wet Nickel-Cadmium | 277 | M- 3750 | 120/240 | EMBP- External bypass switch ⁵ | | | | DIAL- Autodialer | |
| | | | P- 5000 | 120/277 | | | | | RMP- Remote metering panel | SEIS- Seismic mounting |
| | | | R- 6000 | | | | | | RSAP- Remote summary alarm panel | ZONEM- Zone monitoring |
| | | | S- 8000 | | | | | | DCS- Dry summary alarm contacts | BATM- Battery cycle warranty monitor |
| | | | T- 10000 | | | | | | INVON- Inverter on dry contacts | |
| | | | U- 12500 | | | | | | VTD- Variable time delay | NOFF- Normally Off output ⁶ |
| | | | V- 16700 | | | | | | | |

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

⁶ Normally Off loads cannot exceed 20% of total KVA rating with any combination of H.I.D loads

Specifications

GENERAL

Design

Stand-by. PWM inverter type utilizing IGBT technology with 2ms 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, communications

Communications RS-232 port (DB9)

ELECTRICAL INPUT

Voltage

120/208 or 277/480 3 phase 4-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 Input Circuit Breaker
- 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 +/-4%, battery discharge +/-4%

Dynamic Voltage

- +/-3% for +/-25% load step change,
- +/-6% load step change, recovery within 3 cycles
- Harmonic Distortion <3% THD for linear load
- Output Frequency 60Hz +/- 0.05Hz during emergency mode
- Load Power Factor 0.5 lag to 0.5 lead
- Inverter Overload 115% 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 (max. 3 months at 104° F (40° C)
- -0°F to 104°F (-18°C to 40°C) with batteries

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 the 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 or filters 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.

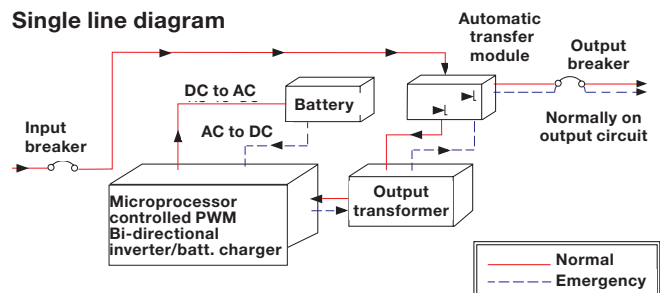
Optional features - Output Circuit Breakers, Output Trip Alarms, 20 Years Sealed Batteries, 12 Hours Fast Recharge, External Maintenance Bypass Switch, Remote Meter Panel, Remote Summary Alarm Panel, Summary Alarm Dry Form C Contact, Inverter on Dry Contacts, Normally OFF output, Fax/Modem, Bypass Relays,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

Factory start-up - (Includes one additional year of warranty. See warranty conditions.

Warranty 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



Characteristics, specifications or dimensions subject to change without notice.