Emerg-Power Systems 3FTC Three Phase Series

Fast transfer emergency lighting inverter system 4.8KVA – 50KVA

Features

- 98% efficient at full load
- PWM/IGBT technology
- Self-testing/self-diagnostic
- User programmable with password protection
- Standard input circuit breaker
- Internal maintenance bypass (MBB)
- RS232 communication port
- Microprocessor 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 VRLA batteries
- Forced air cooling during emergency mode only

UL listed to UL 924. Meets NFPA101, NFPA70, NFPA 110, OSHA, UBC, SBCCI. NYC approved.

Electrical/mechanical characteristics[3] (data provided for standard lead-calcium batteries)[3]

Power rating[1] KVA= W	Effic. at full load %	Max. input current (A) 120V/ 208V	277V/ 480V	Heat loss in normal mode (BTU/HR)	Batt. VDC	Batt. A	No. of Batt.	Electronics cabinet dimensions W"	H"	D"	Battery cabinet dimensions[1,2] W"	H"	D"	No. of batt. cab.	Batt. cab. weight lbs	Elec. cab. weight lbs	Batt weight lbs	Total system weight lbs
4.8	98	17	7	326	144	39	12	30	47	25	30	47	25	1	N/A	535 lbs	888 lbs	1633 lbs
6	98	21	9	408	180	39	15	30	47	25	30	47	25	1	N/A	535 lbs	1110 lbs	1855 lbs
8	98	28	12	544	240	39	20	30	47	25	30	47	25	1	N/A	535 lbs	1480 lbs	2247 lbs
10	98	35	15	680	144	81	24	30	47	25	30	47	25	1	N/A	639 lbs	1776 lbs	2835 lbs
12.5	98	43	19	850	180	81	30	30	47	25	30	47	25	2	N/A	639 lbs	2220 lbs	3279 lbs
16.7	98	58	25	1136	240	81	40	30	47	25	30	47	25	2	210 lbs	639 lbs	2960 lbs	4063 lbs
24	98	84	36	1632	240	117	60	44	72	31	48	72	31	1	232 lbs	1250 lbs	4440 lbs	6390 lbs
33	98	115	50	2244	240	160	40	44	72	31	48	72	31	2	420 lbs	1250 lbs	6080 lbs	8630 lbs
40	98	139	60	2720	240	194	100	44	72	31	48	72	31	2	420 lbs	1450 lbs	7400 lbs	10150 lbs
50	98	174	75	3400	240	243	60	44	72	31	48	72	31	2	464 lbs	1460 lbs	9120 lbs	11980 lbs

[1]KVA= KW

[2]Battery cabinets are stackable. Must be installed on top of the electronics cabinet max. 16.7

[3]Special voltages can change the size, weight or number of cabinets

How to order

Input/output voltage[1]	Battery type	VA/W rating		System type	Run time[2]	Output breaker config.	Output breaker voltage
1= 120/208 **2**= 277/480 **Z**= Other voltages	**SG**= Sealed lead-calcium **G**= 20 year battery warranty	4800 6000 8000 10000 12500	16700 24000 33000 40000 50000	**3FTC**	**Blank**= 90 minutes **120**= 120 minutes[2]	**B**= Normally-on **N**= Normally-off	**A**= 120, 1 pole **B**= 208, 2 pole **C**= 240, 2 pole **D**= 277, 1 pole **E**= 120/208, 3 pole **F**= 277/480, 3 pole **G**= 480, 2 pole

[1]Special voltages may change the size, weight or number of cabinets

[2]Other run times available 120 min. not available for 50KVA

Output breaker amp.[3]	Output breaker qty.	Options	Monitoring[5]	Warranty (1 yr. std.)	Accessories
10= 10 **16**= 16 **20**= 20 **25**= 25 **32**= 32 **40**= 40 **50**= 50 **63**= 63	**01-42**= Choose the number of output breakers between 01 and 42[4]	**A**= Remote summary alarm panel (requires S option) **BTM**= Battery temperature monitor **BL**= Breaker locks **C**= Status monitoring contacts **DT**= Drip top **F**= Fast charge **I**= Inverter on dry form C contact **L**= Load control interface **M(BBM)**= Internal maintenance bypass **O**= Output transfer delay **P**= Remote status panel (requires C option) **S**= Summary fault form C contacts **SEA**= Serial to ethernet adapter **T**= Ouput trip alarm (supervised) **V**= Time delay 15 minutes **Z**= Seismic bracing/mounting **ZM**= Zone monitoring	**BAC**= Bacnet communication (MSTP) **BIP**= Bacnet IP **MIP**= Modbus TCP/IP **MOD**= Modbus RTU **R**= Remote meter panel	**2YW**= Startup and same day training **2YT**= Startup, same day training and full run test[6] **5YP**= 5 year preventative maintenance plan (startup included) **5YW**= 5 year extended electronics warranty **TR**= Training if required on day other than startup	**Blank**= No accessories **EMBP**= External maintenance bypass switch[7] **SPARES**= Spare fuses and circuit boards **SPAREF**= Spare fuse kit

[3]Higher amp ratings available (contact factory)

[4]Maximum output breakers quantity available: 4.8k to 16.7k systems 12 unsupervised (1 pole) or 8 supervised (1 pole). With the addition of a top enclosure, an additional 30 unsupervised (1 pole) or 20 supervised (1 pole). 24k to 50k systems 36 unsupervised (1 pole), or 30 supervised (1 pole). Combinations of 1, 2 and/or 3 pole breakers available (contact factory)

[5]May only choose one monitoring option

[6]Load must be connected, additional day on-site required

[7]Cannot be purchased with internal output breaker option

Example: 1SG48003FTC120BA1010CBAC

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Specifications

General

Design
- Standby. 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 and output voltage, battery voltage, battery and output current, output VA, temperature, inverter wattage

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 120/208 or 277/480VAC, 3-phase 4 wire
Contact factory for all other voltage

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
Overload capability to 115% continuous rating - 150% for 2.5 seconds, 250% for 3 line cycles.
Protection Optional distribution circuit breaker
Crest factor 2.8

Environmental conditions

Storage/transport
- -4ºF to 158ºF (-20ºC to 70ºC) without batteries max. 3 months at 104° F (40° C)
- -0ºF to 104ºF (-18ºC to 40ºC) 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 year sealed lead-calcium battery 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.

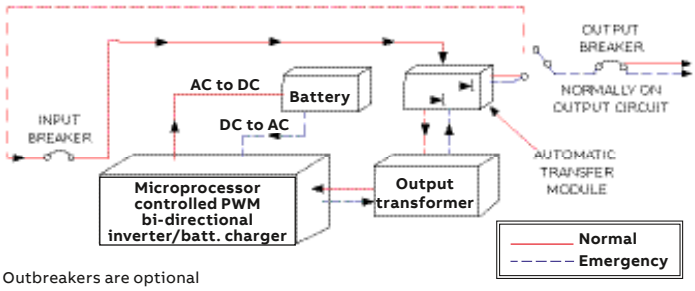
Alarms
High/low battery charger voltage, high/low AC input voltage, near low battery, low battery, load reduction fault, output overload, high ambient temperature, inverter fault, output fault, optional output circuit breaker trip.

Optional features
Output circuit breakers, output trip alarms, 20 year sealed batteries, 12 hours fast recharge, internal/external maintenance bypass switch (BBM), remote summary alarm panel, summary alarm dry form C contact, inverter on dry contacts, normally-off output, bypass relays, seismic mounting, circuit breaker locks, battery temperature monitor, drip top, output transfer delay, time delay, zone monitoring, serial to ethernet, BACnet MS/TP, BACnet IP, remote meter panel, MODBUS serial, MODBUS TCP/IP, serial to ethernet adapter.

Factory start-up 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.
Consult factory for other type batteries than the standard one.

Single line diagram



Outbreakers are optional

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