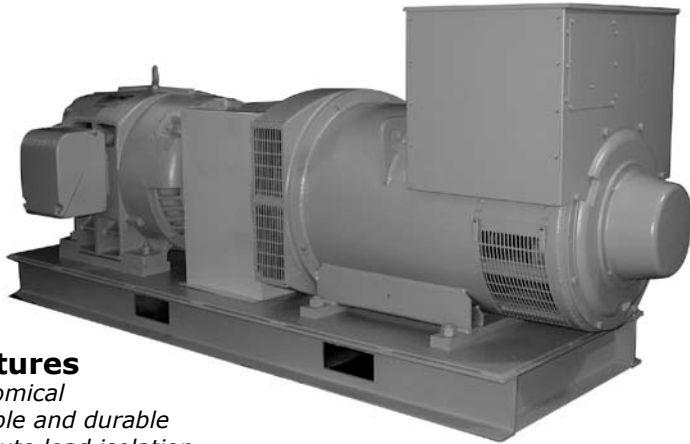




# Horlick Company, Inc.

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## 60FC Model Motor-Generator Set 60-60 Hz Line Conditioner



### Features

*Economical  
Reliable and durable  
Absolute load isolation  
Easy to operate  
Exceptional MTBF  
Minimal maintenance required*

### Description

Horlick 60FC Model motor-generator sets consist of a 4-pole, 1800 RPM, induction motor and a 4-pole, 1800 RPM, synchronous generator mounted on a rigid steel base and connected via a flexible coupling. The output frequency is 60 Hz at no-load and approximately 59.2 Hz at full-load due to the slip of the induction motor. 60FC Model motor-generator sets provide a clean source of 60 Hz power that is isolated from the distribution system. These motor-generators are rated for continuous duty and they provide manufacturers, building operations managers and plant engineers with a 60 Hz power source free of switching transients, voltage fluctuations and power line noise. 60FC Model line conditioners isolate and protect computers, instrumentation and other sensitive electronic equipment from electrical faults that may cause erratic performance or failure. They are ideal in applications that require a pure sine wave and absolute load isolation, but do not necessarily require precisely 60 Hz power.

Horlick 60FC Model motor-generator sets are designed to be installed inside where an 80-85 dBA noise level is acceptable. As an option, 60FC Model motor-generator sets can be mounted in a weather-resistant enclosure, a sound-reduced enclosure, a cargo container or a trailer. Each 60FC Model motor-generator set is equipped with a standard control system that is either wall-mounted or free standing. The components in the control system perform the functions necessary to operate, monitor and protect the system.



### Specifications

#### Motor

- Brushless synchronous, 1800 RPM, 4-pole
- Continuous duty, Class F insulation, open drip-proof
- Selection of 60 Hz, 3-phase input voltages to include: 208V, 230V or 460V

#### Generator

- Brushless synchronous, 1800 RPM, 4-pole
- Continuous duty, Class F insulation, open drip-proof
- Selection of 60 Hz output voltages to include: 120/240V, 1-phase, 120/208V, 3-phase or 277/480V, 3-phase
- Rated at 0.8 power factor to insure proper handling of inductive loads

#### Mechanical Construction

- Motor and generator mounted on rigid steel base
- Flexible coupling drive system
- Complete OSHA coupling guard
- Forklift or pallet jack provisions

#### Standard Control Systems

Each motor-generator set is equipped with a separate wall-mounted or floor-standing control panel. The standard package includes the following components:

#### Motor Controls

- Motor starter with adjustable overload
- Start-Stop push buttons with terminal strip for remote start/stop
- Control power transformer with fusing
- Pilot light to indicate "Motor Run"

#### Generator Controls

- Analog meter package to include voltmeter, ammeter and frequency meter
- Voltmeter and ammeter phase selector switches (3-phase systems)
- Voltage regulator,  $\pm 1\%$  regulation accuracy, with automatic buildup and rheostat for control of regulated voltage
- Output circuit breaker, molded case, to protect generator against short circuit or prolonged overload
- Pilot light to indicate "60 Hz Load On"

### Performance Characteristics

- **Voltage regulation:**  $\pm 1\%$  from no-load to full-load at rated power factor
- **Voltage steady state stability:**  $\pm 0.5\%$  from no-load to full-load at rated power factor
- **Voltage adjustment range:**  $\pm 10\%$  in stepless increments of nominal output voltage
- **Frequency regulation:** 60 Hz no-load to 59.2 Hz full-load
- **Voltage transient:** When a full-load at rated power factor is applied or released, the resultant instantaneous droop or overshoot will not exceed 30% of preset value
- **Voltage recovery time:** After a full-load is applied or released, the output voltage will return to the regulation band within 500 milliseconds
- **Harmonic distortion:** Less than 3% max. total distortion factor and less than 2.5% max. single-phase when measured line-to-line
- **Ambient operating conditions:** Temperature at 40°C, relative humidity at 95%
- **Duty cycle:** Motor-generator set and controls are rated for continuous duty

### Motor-Generator Options

- Sound-reduced enclosure
- Weather-resistant, NEMA 3R enclosure
- Casters for portability
- Thermal bearing and winding protection
- Unit mounted control system
- Input disconnect or circuit breaker
- Input phase protection relay
- Electronic soft start for drive motor
- Automatic restart circuit
- Generator over/under voltage protection
- Digital meter package
- Remote meter package with start/stop controls

60FC Model Three Phase Output Ratings						
Model	Generator Rating at 0.8 PF		Output Current at 120/208V	Output Current at 277/480V	Motor Rating	Motor Starting Method
60FC-53	6.25 KVA	5 KW	17 A	8 A	10 HP	Across the line
60FC-73	9.3 KVA	7.5 KW	26 A	11 A	15 HP	Across the line
60FC-103	12.5 KVA	10 KW	35 A	15 A	20 HP	Across the line
60FC-153	18.8 KVA	15 KW	52 A	23 A	25 HP	Across the line
60FC-203	25 KVA	20 KW	69 A	30 A	30 HP	Across the line
60FC-253	31.3 KVA	25 KW	87 A	38 A	40 HP	Across the line
60FC-303	37.5 KVA	30 KW	104 A	45 A	50 HP	Across the line
60FC-403	50 KVA	40 KW	139 A	60 A	60 HP	Across the line
60FC-503	62.5 KVA	50 KW	174 A	75 A	75 HP	Wye-delta
60FC-603	75 KVA	60 KW	208 A	90 A	100 HP	Wye-delta
60FC-803	100 KVA	80 KW	278 A	120 A	125 HP	Wye-delta
60FC-1003	125 KVA	100 KW	347 A	151 A	150 HP	Wye-delta
60FC-1253	156 KVA	125 KW	434 A	188 A	200 HP	Wye-delta
60FC-1503	188 KVA	150 KW	521 A	226 A	250 HP	Wye-delta
60FC-1753	219 KVA	175 KW	608 A	263 A	300 HP	Wye-delta
60FC-2003	250 KVA	200 KW	695 A	301 A	300 HP	Wye-delta
60FC-2503	313 KVA	250 KW	868 A	376 A	400 HP	Wye-delta
60FC-3003	375 KVA	300 KW	1042 A	452 A	500 HP	Wye-delta
60FC Model Single Phase Output Ratings						
Model	Generator Rating at 0.8 PF		Output Current at 120/240V		Motor Rating	Motor Starting Method
60FC-51	6.25 KVA	5 KW	26 A		10 HP	Across the line
60FC-71	9.3 KVA	7.5 KW	39 A		15 HP	Across the line
60FC-101	12.5 KVA	10 KW	52 A		20 HP	Across the line
60FC-151	18.8 KVA	15 KW	78 A		25 HP	Across the line
60FC-201	25 KVA	20 KW	104 A		30 HP	Across the line
60FC-251	31.3 KVA	25 KW	130 A		40 HP	Across the line
60FC-301	37.5 KVA	30 KW	156 A		50 HP	Across the line
60FC-401	50 KVA	40 KW	208 A		60 HP	Across the line
60FC-501	62.5 KVA	50 KW	260 A		75 HP	Wye-delta
60FC-601	75 KVA	60 KW	313 A		100 HP	Wye-delta
60FC-801	100 KVA	80 KW	417 A		125 HP	Wye-delta
60FC-1001	125 KVA	100 KW	521 A		150 HP	Wye-delta