



## 60SC Model Motor-Generator Set 50-60 Hz Frequency Converter

### Features

*Economical*

*Reliable and durable*

*Low audible noise*

*Easy to operate*

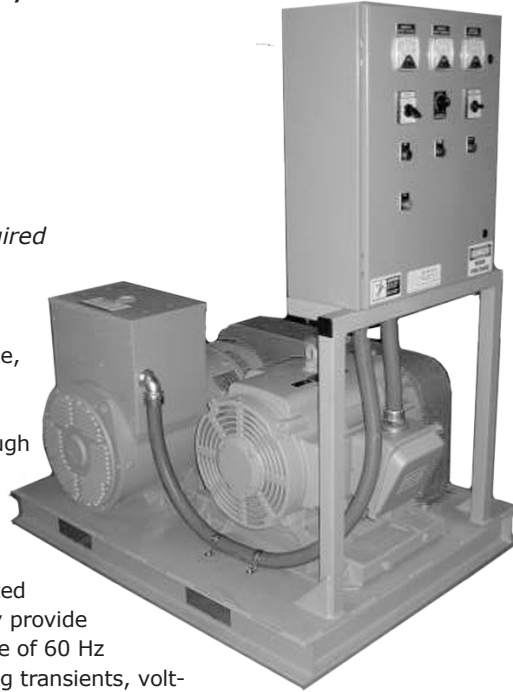
*Exceptional MTBF*

*Minimal maintenance required*

### Description

Horlick 60SC Model motor-generator sets utilize a 4-pole, 1500 RPM, induction motor to drive a 4-pole, 1800 RPM, synchronous generator through a V-belt drive system. The output frequency is 60 Hz ( $\pm 1.5\%$ ) due to slip of the induction motor. 60SC Model motor-generator sets are rated for continuous duty and they provide manufacturers a clean source of 60 Hz power isolated from switching transients, voltage fluctuations and power line noise. They are most commonly utilized by foreign manufacturers who require 60 Hz power to test electrical equipment prior to shipment to the United States. Alternatively, these motor-generator sets can also be utilized in overseas applications to power 60 Hz equipment brought over from the United States. 60SC Model motor-generator sets are ideal for installations where the application does not require a precise 60 Hz power source.

Horlick 60SC Model motor-generator sets are designed to be installed inside where a 75-85 dBA noise level is acceptable. As an option, 60SC Model motor-generator sets can be mounted in a weather-resistant enclosure, a sound-reduced enclosure, a cargo container or a trailer. Each 60SC Model motor-generator set is equipped with a standard control system that can be unit-mounted, wall-mounted or free standing. The components in the control system perform the functions necessary to operate, monitor and protect the system.



### Specifications

#### Motor

- Induction, 1500 RPM, 4-pole
- Continuous duty, Class F insulation, open drip-proof
- Selection of 50 Hz, 3-phase input voltages to include: 208V, 220V, 380V or 416V

#### 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
- V-belt drive system
- Complete OSHA belt guard
- Forklift or pallet jack provisions

#### Standard Control Systems

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

#### Motor Controls

- Motor starter with adjustable overloads
- 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  $\pm 1.5\%$  output from no-load to 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% (higher temperature rating for outdoor use available upon request)
- **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
- Oversized generator to support motor-starting transients
- Thermal bearing and winding protection
- Unit mounted control system
- Input disconnect or circuit breaker
- Input phase protection relay
- Electronic soft start for drive motor
- Generator reconnection switch to allow selection of multiple output voltages
- Generator over/under voltage protection
- Digital meter package
- Remote meter package with start/stop controls

60SC 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
60SC-53	6.25 KVA	5 KW	17 A	8 A	10 HP	Across the line
60SC-73	9.3 KVA	7.5 KW	26 A	11 A	15 HP	Across the line
60SC-103	12.5 KVA	10 KW	35 A	15 A	20 HP	Across the line
60SC-153	18.8 KVA	15 KW	52 A	23 A	25 HP	Across the line
60SC-203	25 KVA	20 KW	69 A	30 A	30 HP	Across the line
60SC-253	31.3 KVA	25 KW	87 A	38 A	40 HP	Across the line
60SC-303	37.5 KVA	30 KW	104 A	45 A	50 HP	Across the line
60SC-403	50 KVA	40 KW	139 A	60 A	60 HP	Wye-delta
60SC-503	62.5 KVA	50 KW	174 A	75 A	75 HP	Wye-delta
60SC-603	75 KVA	60 KW	208 A	90 A	100 HP	Wye-delta
60SC-803	100 KVA	80 KW	278 A	120 A	125 HP	Wye-delta
60SC-1003	125 KVA	100 KW	347 A	151 A	150 HP	Wye-delta
60SC-1253	156 KVA	125 KW	434 A	188 A	200 HP	Wye-delta
60SC-1503	188 KVA	150 KW	521 A	226 A	250 HP	Wye-delta
60SC-1753	219 KVA	175 KW	608 A	263 A	300 HP	Wye-delta
60SC-2003	250 KVA	200 KW	695 A	301 A	300 HP	Wye-delta
60SC-2503	313 KVA	250 KW	868 A	376 A	400 HP	Wye-delta

60SC Model Single Phase Output Ratings					
Model	Generator Rating at 0.8 PF		Output Current at 120/240V	Motor Rating	Motor Starting Method
60SC-51	6.25 KVA	5 KW	26 A	10 HP	Across the line
60SC-71	9.3 KVA	7.5 KW	39 A	15 HP	Across the line
60SC-101	12.5 KVA	10 KW	52 A	20 HP	Across the line
60SC-151	18.8 KVA	15 KW	78 A	25 HP	Across the line
60SC-201	25 KVA	20 KW	104 A	30 HP	Across the line
60SC-251	31.3 KVA	25 KW	130 A	40 HP	Across the line
60SC-301	37.5 KVA	30 KW	156 A	50 HP	Across the line
60SC-401	50 KVA	40 KW	208 A	60 HP	Wye-delta
60SC-501	62.5 KVA	50 KW	260 A	75 HP	Wye-delta
60SC-601	75 KVA	60 KW	313 A	100 HP	Wye-delta
60SC-801	100 KVA	80 KW	417 A	125 HP	Wye-delta
60SC-1001	125 KVA	100 KW	521 A	150 HP	Wye-delta