

50SC Model Motor Generator Set

60-50 Hz FREQUENCY CONVERTER

Features

- Economical
- Reliable and durable
- Low audible noise
- Easy to operate
- Exceptional MTBF
- Minimal maintenance required



Description

Horlick 50SC Model motor generator sets utilize a 4-pole, 1800 RPM, induction motor to drive a 4-pole, 1500 RPM, synchronous generator through a V-belt drive system. The output frequency is 50 Hz ($\pm 1.5\%$) due to slip of the induction motor. 50SC Model motor generator sets are rated for continuous duty and they provide manufacturers a clean source of 50 Hz power isolated from switching transients, voltage fluctuations and power line noise. They are most commonly utilized to test electrical equipment designed for the foreign export market. Alternatively, these motor generator sets can also be utilized in American manufacturing facilities to power 50 Hz equipment imported from overseas. 50SC Model motor generator sets are ideal for installations where the application does not require a precise 50 Hz power source.

Horlick 50SC Model motor generator sets are designed to be installed inside where a 75-85 dBA noise level is acceptable. As an option, 50SC Model motor generator sets can be mounted in a weather-resistant enclosure, a sound-reduced enclosure, a cargo container or a trailer. Each 50SC 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, 1800 RPM, 4-pole
- Continuous duty, Class F insulation, open drip-proof
- Selection of 60 Hz, 3-phase input voltages to include: 208V, 230V, 460V or 575V

Generator

- Brushless synchronous, 1500 RPM, 4-pole
- Continuous duty, Class F insulation, open drip-proof
- Selection of 50 Hz output voltages to include: 120/240V, 1-phase or 120/208V, 220/380V 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 "50 Hz Load On"



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50SC Model Motor Generator Set

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:** 50 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

50SC Model Three Phase Output Ratings

Model	Generator Rating at 0.8 PF		Output Current at 120/208V	Output Current at 220/380V	Motor Rating	Motor Starting Method
	KVA	KW				
50SC-53	6.25	5	17 A	10 A	10 HP	Across the line
50SC-73	9.3	7.5	26 A	14 A	15 HP	Across the line
50SC-103	12.5	10	35 A	19 A	20 HP	Across the line
50SC-153	18.8	15	52 A	29 A	25 HP	Across the line
50SC-203	25	20	69 A	38 A	30 HP	Across the line
50SC-253	31.3	25	87 A	48 A	40 HP	Across the line
50SC-303	37.5	30	104 A	57 A	50 HP	Across the line
50SC-403	50	40	139 A	76 A	60 HP	Across the line
50SC-503	62.5	50	174 A	95 A	75 HP	Wye-delta
50SC-603	75	60	208 A	114 A	100 HP	Wye-delta
50SC-803	100	80	278 A	152 A	125 HP	Wye-delta
50SC-1003	125	100	347 A	190 A	150 HP	Wye-delta
50SC-1253	156	125	434 A	238 A	200 HP	Wye-delta
50SC-1503	188	150	521 A	285 A	250 HP	Wye-delta
50SC-1753	219	175	608 A	333 A	300 HP	Wye-delta
50SC-2003	250	200	695 A	380 A	300 HP	Wye-delta
50SC-2503	313	250	868 A	475 A	400 HP	Wye-delta

50SC Model Single Phase Output Ratings

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