



Horlick Company, Inc.

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60RC Model Motor-Generator Set 60-60 Hz Line Conditioner



Features

*Precise 60 Hz output frequency
Common frame design
Absolute load isolation
Easy to operate
Exceptional MTBF
Minimal maintenance required*

Description

Horlick 60RC Model motor-generator sets consist of a 4-pole, synchronous motor and a 4-pole, synchronous generator mounted on a common shaft. These units run at 1800 RPM and deliver an output frequency of precisely 60 Hz from no-load to full-load. 60RC 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. 60RC 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 where a pure sine wave, absolute load isolation and continuous run time are required.

Horlick 60RC Model motor-generator sets are designed to be installed inside where an 80-85 dBA noise level is acceptable. As an option, 60RC Model motor-generator sets can be mounted in a weather-resistant enclosure, a sound-reduced enclosure, a cargo container or a trailer. Each 60RC 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: 120/208V 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 common shaft
- Reinforced steel frame
- Precision machined and dynamically balanced rotor

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
- Variable transformer for power factor control, with protective relay for motor out-of-step and field failure protection
- Analog meter package to include ammeter and run time meter
- Pilot lights to indicate "Motor Run" and "60 Hz Line Energized"

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"
- Over voltage protection package to include output circuit breaker shunt trip

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:** Precise 60 Hz 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%
- **Duty cycle:** Motor-generator set and controls are rated for continuous duty

Motor-Generator Options

- Weather-resistant, NEMA 3R enclosure
- Thermal bearing and winding protection
- Input disconnect or circuit breaker
- Input phase protection relay
- Automatic restart circuit
- Digital meter package
- Remote meter package with start/stop controls

60RC 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
60RC-203	25 KVA	20 KW	69 A	30 A	30 HP	Wye-delta
60RC-253	31.3 KVA	25 KW	87 A	45 A	40 HP	Wye-delta
60RC-303	37.5 KVA	30 KW	104 A	57 A	50 HP	Wye-delta
60RC-403	50 KVA	40 KW	139 A	60 A	60 HP	Wye-delta
60RC-503	62.5 KVA	50 KW	174 A	75 A	75 HP	Wye-delta
60RC-603	75 KVA	60 KW	208 A	90 A	100 HP	Wye-delta
60RC-753	93.8 KVA	75 KW	261 A	113 A	125 HP	Wye-delta
60RC-1003	125 KVA	100 KW	347 A	151 A	150 HP	Wye-delta
60RC-1253	156 KVA	125 KW	434 A	188 A	200 HP	Wye-delta
60RC-1503	188 KVA	150 KW	521 A	226 A	250 HP	Wye-delta
60RC-1753	219 KVA	175 KW	608 A	263 A	300 HP	Wye-delta
60RC-2003	250 KVA	200 KW	695 A	301 A	300 HP	Wye-delta
60RC-2503	313 KVA	250 KW	868 A	376 A	400 HP	Wye-delta
60RC-3003	375 KVA	300 KW	1042 A	452 A	500 HP	Wye-delta
60RC-3503	438 KVA	350 KW	1216 A	527 A	550 HP	Wye-delta
60RC-4003	500 KVA	400 KW	1390 A	602 A	600 HP	Wye-delta
60RC-4503	563 KVA	450 KW	1563 A	677 A	700 HP	Wye-delta
60RC-5003	625 KVA	500 KW	1737 A	753 A	750 HP	Wye-delta
60RC-5503	688 KVA	550 KW	1911 A	828 A	850 HP	Wye-delta
60RC-6003	750 KVA	600 KW	2084 A	903 A	1000 HP	Wye-delta
60RC-6503	813 KVA	650 KW	2258 A	978 A	1000 HP	Wye-delta
60RC-7003	875 KVA	700 KW	2432 A	1054 A	1100 HP	Wye-delta
60RC-7503	938 KVA	750 KW	2605 A	1129 A	1250 HP	Wye-delta
60RC-8003	1000 KVA	800 KW	2779 A	1204 A	1250 HP	Wye-delta