



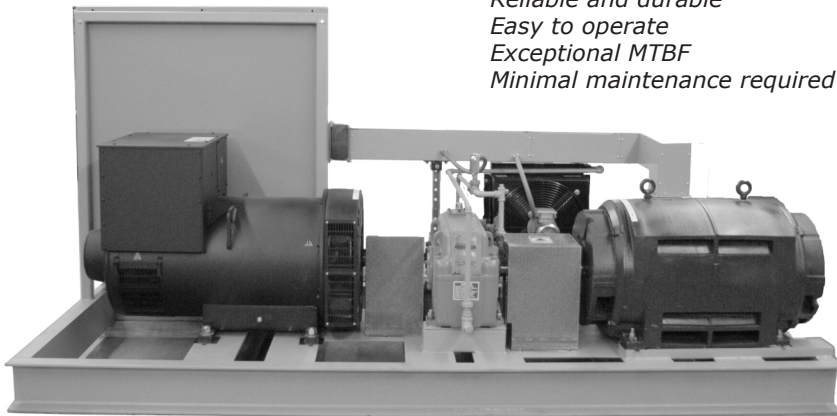
# Horlick Company, Inc.

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

### Features

*Designed to power large loads  
Reliable and durable  
Easy to operate  
Exceptional MTBF  
Minimal maintenance required*



### Description

Horlick 50RG Model motor-generator sets utilize a 4-pole, 1800 RPM, induction motor to drive a 4-pole, 1500 RPM synchronous generator through a reduction gear system. The output frequency is 50 Hz ( $\pm 0.5\%$ ) due to slip of the induction motor. 50RG 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 by American-based manufacturers who need to run a large piece of imported 50 Hz equipment as a part of their process here in the US. 50RG Model motor-generator sets are ideal for large capacity installations where the application does not require a precise 50 Hz power source.

Horlick 50RG Model motor-generator sets are designed to be installed inside where a 100-105 dBA noise level is acceptable. As an option, if noise level reduction or weather protection is required, 50RG Model motor-generator sets can be mounted in a cargo container. Each 50RG Model motor-generator set is equipped with a standard free-standing control system. 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: 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: 120/208V, 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
- Reduction gear drive system
- Complete OSHA coupling guard
- Forklift or pallet jack provisions

#### Standard Control Systems

Each motor-generator set is equipped with a separate free-standing control panel. 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"
- Pilot light to indicate "Reduction Gear Low Oil Flow"

#### 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"



### 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  $\pm 0.5\%$  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

- Cargo container for sound reduction or weather protection
- Oversized generator to support motor-starting transients
- Thermal bearing and winding protection
- Input disconnect or circuit breaker
- Input phase protection relay
- 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

50RG 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
50RG-3003	375 KVA	300 KW	1042 A	570 A	500 HP	Wye-delta
50RG-4003	500 KVA	400 KW	1390 A	761 A	600 HP	Wye-delta
50RG-5003	625 KVA	500 KW	1737 A	951 A	750 HP	Wye-delta
50RG-6003	750 KVA	600 KW	2084 A	1141 A	1000 HP	Wye-delta
50RG-8003	1000 KVA	800 KW	2779 A	1521 A	1250 HP	Wye-delta
50RG-10003	1250 KVA	1000 KW	3474 A	1901 A	1500 HP	Wye-delta