



Model 25 RN/L 25 kW Natural Gas\ LP Generator Set

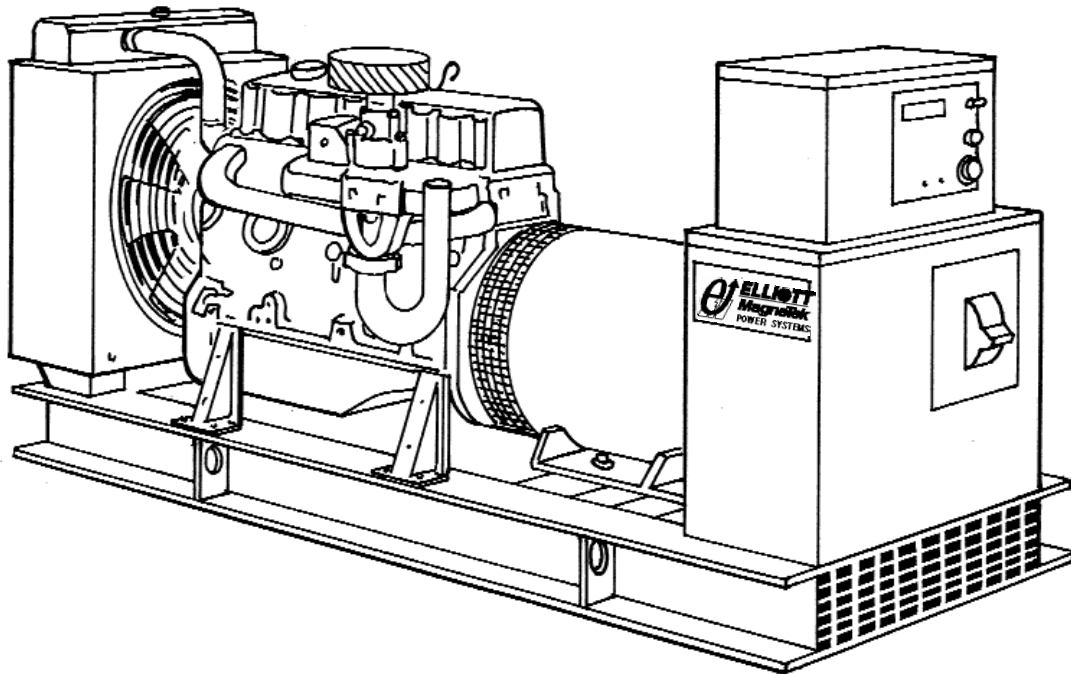
Generator Set Rating

Three Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	25/31	23/28
Prime Power 105°C	23/28	20/25
Single Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	17/17	19/19
Prime Power 105°C	14/14	16/16

Quality Power Producing Equipment

is our business at Elliott MagneTek Power Systems, Inc.. Our power systems offer solutions to requirements for reliable, quality electrical power.

- 100% full load tested.
- Performance supported by prototype testing.
- 12 lead re-connectable AC synchronous generators.
- Solid state automatic voltage regulator.
- 50 or 60 Hz operational.
- Standard Digital Control Panel meeting standards set by NFPA-110.



Product Features

System Reliability and Longevity

begin with design experience and integrity. EMPS was formed by two companies with over one hundred years experience producing state-of-the-art power generation equipment. This experience is designed into our generator sets.

Single Source Responsibility:

Product service, support and parts available through EMPS network of distributors.

Accessories and Flexibility

are designed into EMPS' generator sets at the factory level to meet specific application needs.

Organizational Commitment

to innovative, leading edge technology and environmentally friendly electrical products and services.

Generator Set Design Features

Model 25 RN/L 25kW NG\ LP Generator Set

Standard Equipment

- * 4 Cycle engine.
- * AC synchronous 12 lead re-connectable brushless alternator.
- * Steel base with vibration isolators between engine, generator and base.
- * Generator mounted terminal and meter /control box.
- * Circuit breaker-mounting provisions.
- * Connection area for main AC terminals and all control wiring
- * 12 volt DC engine electrical system.
- * 12 volt starter motor.
- * Battery charging alternator.
- * Battery rack and cables.
- * Flexible fuel lines.
- * Most metallic parts incorporate our powder paint primer base coat with UV inhibitive enamel top coat.
- * Single stage dry type air cleaner.
- * Corrosion resistant hardware.
- * Oil drain extension plumbed to base rail for convenient connection.
- * Microprocessor based auto start meter/ control panel.
- * Digital read out control system rated to operate from -30° C to 75° C with the following standard displays, shown continuously:
 - ** Generator AC voltage.
 - ** AC amperage:
 - Phase 1-2
 - Phase 2-3
 - Phase 3-1
 - ** Frequency
 - ** Oil Pressure
 - ** Engine Temperature
 - ** Battery Voltage
 - ** Fuel Level (Diesel Only)
- * The following can be displayed using the scroll lock function:
 - ** Run time
 - ** Safety set point for over speed
 - ** Over crank
 - ** High water temperature
 - ** Low oil pressure
- * Voltage adjust rheostat
- * Auto/off /run switch

Generator Specifications

Manufacturer: MagneTek

Insulation: The main stator, main rotor, exciter stator and exciter rotor are all insulated with Class H materials and rated Class F per NEMA MG1 -1.65 and 852757 definition. All materials are non-hygroscopic to prevent fungus growth. A polyester and epoxy combination offers maximum environmental protection.

Main Stator: 2/3 pitch and one slot skewing minimize voltage harmonics and meets telephone influence factor (TIF) per NEMA MG1-22.43. Twelve lead re-connectable design. Coated with anti-abrasive sealer.

Main Rotor: Four pole single piece lamination with full amortisseur windings and coil supports. Winding is precision wet layer wound with epoxy resin and dynamically balanced to two mil in two planes. Production over speed tested at 125% for 15 minutes. All materials are non-hygroscopic to prevent fungus growth.

Exciter: Brushless, three phase, six-pole rotor, and production over speed tested at 125% operating speed.

Rotating Diode: Sealed full wave with metal oxide surge suppressor

Bearing: Double-sealed, permanently lubricated, 50,000 hour B-10 life including magnetic pull.

Drive Coupling: Positive alignment, flexible drive discs.

Automatic Voltage Regulator Specifications

Operation: Volts per hertz, three phase sensing with overload and loss of sensing protection.

Construction: Solid state, modular: fully sealed and potted design provides component protection from corrosive environments and vibration.

Voltage Regulation: +/- 1% voltage regulation no load to full rated load: +/- 1/2% voltage regulation at steady state conditions.

Radio Interference (RFI): Integral filter provides suppression of conducted electromagnetic interference to levels meeting most commercial requirements.

Voltage Selections and Full Load Amperages at Standby Rating

Three Phase

60 Hz Amperage	50 Hz Amperage
120/208	87 110/190 87
120/240	75 120/208 80
277/480	38 230/400 41
347/600	30 240/415 40

*Single Phase

60 Hz Amperage	50 Hz Amperage
120/240	71 110/220 86

All voltages listed are available and/or re-connectable with the exception of the three phase, 60 Hz, 347/600 volt generator which is application specific. For other voltages, contact your EMPS distributor. All output amperage ratings listed above are at standby rating.

*Single Phase amperage based on standard generator and unity power factor. For full single phase output use generator model MTG24.

Application and Performance Data

MagneTek Alternator Model MTG21 is standard with this package.

Larger generators may be required to meet certain application specific requirements such as Single Phase, Motor Starting and Non Linear Loads. The Maximum Generator rating available in this package is MTG25.

Technical Specifications

Model 25 RN/L 25 kW NG\ LP Generator Set

Engine Specifications

Manufacturer	General Motors	
Model	3.0 L	
Aspiration	Natural	
Cylinders	4	
Displacement	181 In ³ . (3 L)	
Bore and Stroke,	4 in x 3.6 in. (101.6 mm x 91.4 mm)	
Compression Ratio	9.25:1	
Minimum C.C.A. at 5°C	550	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ"D at Rated kW	40	34
BMEP	97 psi	99 psi

Generator Set Deration Factors

Temperature:
 1% for every 10° F above 120° F
 1% for every 6°C above 49°C

Altitude
 2% for every 1000 feet above
 Sea Level
 2% for every 305 meters above
 183 meters

Cooling System

High Ambient 105°F (41°C) System
 Coolant Capacity with Radiator
 3 US Gal. (11.4 L)

Maximum restriction on discharge side of
 radiator 5 In wc (125 Pa)

	1800 rpm	1500 rpm
Coolant Flow	18.2 GPM (68.9 LPM)	15 GPM (56.8 LPM)

Heat Rejection
 to Coolant at Rated
 Full Load 1500 Btu/min
 Propane (158.3 MJ/min) 1400 Btu/min
 (147.7 MJ/min)

Heat Rejection
 to Coolant at Rated
 Full Load 1500 Btu/min
 Nat. Gas (158.3 MJ/min) 1400 Btu/min
 (147.7 MJ/min)

Heat Rejection
 to Room at Rated
 Full Load 4500 Btu/min
 Propane (474.8 MJ/min) 4200 Btu/min
 (443.1 MJ/min)

Heat Rejection
 to Room at Rated
 Full Load 4500 Btu/min
 Nat. Gas (474.8 MJ/min) 4200 Btu/min
 (443.1 MJ/min)

Air System

	1800 rpm	1500 rpm
Maximum Air Intake Restriction	12 In wc (2.99 kPa)	12 In wc (2.99 kPa)
Radiator Cooling Air Flow	2160 cfm (61.1 m ³ /min)	1800 cfm (51 m ³ /min)
Combustion Air Flow	85 cfm (2.4 m ³ /min)	70 cfm (2 m ³ /min)
Generator Cooling Air Flow	453 cfm (12.8 m ³ /min)	378 cfm (10.7 m ³ /min)

Exhaust System

Exhaust Outlet
 Connection 2 in. NPT.
 Maximum Allowable Back Pressure
 1.5 In Hg (5.08 kPa)

Exhaust Gas Flow
 at Standby
 Rating 160 cfm
 (4.5 m³/min) 146 cfm
 (4.1 m³/min)

Exhaust Temp at
 Standby Rating 1125°F
 (607°C) 1075°F
 (579°C)

Fuel System

Consumption at Standby Rating:

		Propane	Natural Gas
	kW	lbs./hr.(kg./hr.)	CFH(m ³ /hr.)
1/4	6	10(4.5)	191(5.4)
1/2	12	13(6.0)	248(7)
3/4	18	16.4(7.4)	311(8.8)
Full	25	19.8(9.0)	375(10.6)

		Propane	Natural Gas
	kW	lbs./hr.(kg./hr.)	CFH(m ³ /hr.)
1/4	5	8.5(3.9)	163(4.6)
1/2	11	11.0(5.0)	211(6)
3/4	17	13.8(6.3)	266(7.5)
Full	23	16.7(7.6)	320(9.1)

Governor Type Electronic
Governor Regulation: 1/4% Steady State

Generator

Manufacturer MagneTek
 Model MTG21
 Motor Starting KVA,
 240/480 Volt WYE at
 35% Voltage Dip,100%
 Voltage Recovery 45 SKVA

Maximum Motor
 Starting KVA,35% Voltage Dip
 Oversized Generator
 MTG25 116 SKVA

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	4.08	3.72
Direct Axis Transient X'd	.31	.286
Direct Axis Subtransient X'd	.241	.222
Negative Sequence X ₂	.290	.268
Zero Sequence X ₀	.0040	.0037

Lubrication System

Engine Oil Capacity with Filters 22 qts. (18.3 L)
 Oil Filter Type Spin On

