

# APPLICATION & ENGINEERING DATA

## GENERATOR SPECIFICATIONS

|   |                                |
|---|--------------------------------|
| TYPE .....                                | Four-pole, revolving field     |
| ROTOR INSULATION .....                    | Class H                        |
| STATOR INSULATION .....                   | Class H                        |
| TOTAL HARMONIC DISTORTION .....           | <3%                            |
| TELEPHONE INTERFERENCE FACTOR (TIF) ..... | <50                            |
| ALTERNATOR .....                          | Self-ventilated and drip-proof |
| BEARINGS (PRE-LUBED & SEALED) .....       | 1                              |
| COUPLING .....                            | Direct, Flexible Disc          |
| LOAD CAPACITY (STANDBY) .....             | 100%                           |

**NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN2671 standards.**

### EXCITATION SYSTEM

|   |  |
|---|--|
| <input type="checkbox"/> BRUSHLESS .....                | Magnetically coupled DC current ✓                  |
|   | Eight-pole exciter w/ battery-driven field boost ✓ |
|   | Mounted outboard of main bearing ✓                 |
| <input type="checkbox"/> PERMANENT MAGNET EXCITER ..... | Eighteen pole exciter ✓                            |
|   | Magnetically coupled DC current ✓                  |
|   | Mounted outboard of main bearing ✓                 |
| REGULATION .....  | Solid-state ✓                                      |
|   | ±1% regulation ✓                                   |

## GENERATOR FEATURES

- Four pole, revolving field generator, directly connected to the engine shaft through a heavy-duty, flexible disc for permanent alignment.
- Generator meets temperature rise standards for class "F" insulation as defined by NEMA MG1-22.4 and NEMA MG1-1.65.
- Rotor and stator and other insulation is impregnated twice with class "H" varnish.
- All models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- Unit tested for motor-starting ability by measuring instantaneous voltage dip with an oscillograph.
- All models utilize an advanced wire harness design for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, and T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-22.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and optional main-line circuit breakers capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN2671). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN2671).

## ENGINE SPECIFICATIONS

|                               |                                |
|-------------------------------|--------------------------------|
| MAKE .....                    | GENERAC                        |
| MODEL .....                   | 7.4GN                          |
| CYLINDERS .....               | V-8                            |
| DISPLACEMENT .....            | 7.4 Liter (454 cu. in.)        |
| BORE .....                    | 108 mm (4.25 in.)              |
| STROKE .....                  | 102 mm (4.00 in.)              |
| COMPRESSION RATIO .....       | 8.5:1                          |
| INTAKE AIR .....              | Naturally Aspirated            |
| NUMBER OF MAIN BEARINGS ..... | 5                              |
| CONNECTING RODS .....         | 8-Drop forged steel            |
| CYLINDER HEAD .....           | Cast Iron                      |
| PISTONS .....                 | 8-Notched Head, Aluminum Alloy |
| CRANKSHAFT .....              | Nodular Steel                  |

### VALVE TRAIN

|                              |                        |
|------------------------------|------------------------|
| LIFTER TYPE .....            | Hydraulic              |
| INTAKE VALVE MATERIAL .....  | Aluminized Steel Faced |
| EXHAUST VALVE MATERIAL ..... | Stellite Faced         |
| HARDENED VALVE SEATS .....   | Standard               |

### ENGINE GOVERNOR

|   |   |
|---|---|
| <input type="checkbox"/> MECHANICAL (Gear Driven) ..... | Standard  |
|   | FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ... 5.0% |
|   | STEADY STATE REGULATION .....                       |
|   | ±0.5%   |
| <input type="checkbox"/> ELECTRONIC .....               | Optional  |
|   | FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ... 0.5% |
|   | STEADY STATE REGULATION .....                       |
|   | ±0.25%  |

### LUBRICATION SYSTEM

|                          |                      |
|--------------------------|----------------------|
| TYPE OF OIL PUMP .....   | Trochoid             |
| OIL FILTER .....         | Full flow, cartridge |
| CRANKCASE CAPACITY ..... | 4.7 Liters (5 qts.)  |

### COOLING SYSTEM

|                            |                              |
|----------------------------|------------------------------|
| TYPE OF SYSTEM .....       | Pressurized, closed recovery |
| WATER PUMP .....           | Pre-lubed, self-sealing      |
| TYPE OF FAN .....          | Pusher                       |
| NUMBER OF FAN BLADES ..... | 7                            |
| DIAMETER OF FAN .....      | 580 mm (23 in.)              |
| COOLANT HEATER .....       | 120V, 1800 W                 |

### FUEL SYSTEM

|  |                                |
|--|--------------------------------|
| FUEL   |                                |
| <input type="checkbox"/> Natural Gas or L.P. Vapor ..... | Standard                       |
| <input type="checkbox"/> L.P. Liquid Withdrawal .....    | Optional                       |
| CARBURETOR .....   | Down draft                     |
| SECONDARY FUEL REGULATOR .....                           | Nat. Gas or L.P. Vapor Systems |
| HOT WATER VAPORIZER .....                                | L.P. Liquid Withdrawal Systems |
| AUTOMATIC FUEL LOCKOFF SOLENOID .....                    | Standard                       |
| OPERATING FUEL PRESSURE VAPOR SYSTEMS .....              | 7" to 15" H <sub>2</sub> O     |

### ELECTRICAL SYSTEM

|                                 |                          |
|---------------------------------|--------------------------|
| BATTERY CHARGE ALTERNATOR ..... | 50 Amps at 12 V          |
| STARTER MOTOR .....             | 12 V                     |
| RECOMMENDED BATTERY .....       | (1) - 12 V, 90 A.H., 27F |
| GROUND POLARITY .....           | Negative                 |