Standby Generators Liquid Cooled 70kW

Gas Engine Generator Sets

Continuous Standby Power Rating:

- EGEN70 (Aluminum) - 70 kW 60Hz
  - Naturally Aspirated
  - Gaseous Fueled
  - Meets 2009 EPA Emission Regulations

Standard Equipment:

- All input connections in one single area
- High coolant temperature shutdown
- Low oil pressure shutdown
- Low coolant level automatic shutdown
- Overspeed automatic shutdown
- Adjustable crank timer
- Adjustable exercise timer
- Oil drain extension
- Cool flow radiator
- Closed coolant recovery system
- UV/Ozone resistant hoses
- Watertight state of the art electrical connectors
- Mainline circuit breaker
- Oil drain extension to frame rail
- Radiator drain extension
- Battery charge alternator
- 2 Amp static battery charger
- Battery and battery cables
- Battery rack
- Fan and belt guards
- Isochronous governor

Features:

- Innovative design and fully prototype tested
- UL2200 Listed
- Solid state frequency compensated digital voltage regulator
- Dynamic and static battery charger
- Sound attenuated acoustically designed enclosure
- Quiet test for low noise level exercise
- Acoustically designed engine cooling system
- High flow low noise factory engineered exhaust system
- State of the art digital control system with HSeries microprocessor control panel
- Built-in kW, kVAR and power factor meters
- Watertight electrical connectors
- Rodent proof construction
- High efficiency, low distortion alternator
- Vibration isolated from mounting base
- Matching Eaton transfer switches engineered and tested to work as a system
- All components easily accessible for maintenance
- Electrostatically applied powder paint

Table 1.

Specifications	
Generator	
Type	Synchronous
Rotor/Stator Insulation	Class H
Weight	2,185 lbs.
Total Harmonic Distortion	<3.5%
Telephone Interference Factor (Tif)	<50
Alternator Output Leads 3 Phase	4 wire
Bearings	Sealed Ball
Coupling	Flexible Disc
Excitation System	Brushless
NOTE: Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046, and DIN6271 standards.	
Engine	
Bore	3.55
Stroke	4.17
Compression Ratio	9:1
Intake Air System	Naturally Aspirated
Valve Seats	Hardened
Lifter Type	Hydraulic
Oil Pump	Gear
Oil Filter	Full Flow Spin-On Cartridge
Crankcase Capacity	5 Quarts
Cooling System Type	Closed
Water Pump Flow	Belt driven
Fan Speed	2030
Fan Diameter	22 Inches
Fan Mode	Pusher
Governor	
Type	Electronic
Frequency Regulation	Isochronous
Steady State Regulation	± 0.25%
Fuel System	
Type	Natural gas, propane vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	11" - 14" H_2O
Voltage Regulator	
Type	Full Digital
Sensing	Three Phase
Regulation	± 1/4%
Features	Built into HSeries Control Panel. Adjustable V/F, Voltage & Gain
Electrical System	
Battery Charge Alternator	12v 30 Amp
Static Battery Charger	12v 2 Amp
Recommended Battery	Group 24F, 525cca
System Voltage	12 Volts

Generator Features:

- Revolving field heavy duty generator
- Directly connected to the engine
- Operating temperature rise 120 °C above a 40 °C ambient
- Insulation is Class H rated at 150 °C rise
- All prototype models have passed three phase short circuit testing

Control Panel Features:

- Two Four Line LCD Displays Read
  - Voltage (all phases)
  - Power factor
  - kVAR
  - Engine speed
  - Run hours
  - Fault history
  - Coolant temperature
  - Low oil pressure shutdown
  - Overvoltage
  - Low coolant level
  - Not in auto position (flashing light)
  - ATS selection
  - Current (all phases)
  - kW
  - Transfer Switch status
  - Low fuel pressure
  - Service reminders
  - Oil pressure
  - Time and date
  - High coolant temperature shutdown
  - Overspeed
  - Exercise speed

- Internal Functions:
  - I^2T function for alternator protection from line to neutral and line to line short circuits
  - Emergency stop
  - Programmable auto crank function
  - 2 wire start for any transfer switch
  - Built-in 7 day exerciser
  - Adjustable engine speed at exerciser
  - RS232 port for GenLink® control
  - RS485 port remote communication
  - Canbus addressable
  - Governor controller and voltage regulator are built into the master control board
  - Temperature range -40 °C to 70 °C

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, ISO8528 and DIN6271).

Table 2.

Operating Data			
kW Rating (Load Capacity/Standby Rating)	70		
Engine Size	6.8 Liter V-Type 10 Cylinder		
Generator Output Voltage/kW - 60hz	**kW**	**Amp**	**CB Size**
120/240v, 1-Phase, 1.0 Pf	70	292	300
120/208v, 3-Phase, 0.8 Pf	70	210	250
120/240v, 3-Phase, 0.8 Pf	70	243	300
277/480v, 3-Phase, 0.8 Pf	70	105	125
Generator Locked Rotor Kva Available @ Voltage Dip Of 35%			
Single phase or 208/240 3-phase 480v 3-Phase	145 160		
Engine Fuel Consumption	**Natural Gas**	**Propane**	
	(ft^3/hr.)	**(gal/hr.)**	**cu ft/hr**
Exercise cycle	110	1.20	44.2
25% of rated load	260	2.85	104.9
50% of rated load	499	5.46	200.9
75% of rated load	696	7.62	280.4
100% of rated load	1020	11.17	411
Engine Cooling			
Air flow (inlet air including alternator and combustion air) ft^3/min.	5,200		
System coolant capacity US gal.	4.5		
Heat rejection to coolant BTU/hr.	287,000		
Max. operating air temp. on radiator °C (°F)	60 (150)		
Max. ambient temperature °C (°F)	50 (140)		
Combustion Air Requirements			
Flow at rated power 60 Hz cfm	205		
Sound Emissions In Dba			
Exercising at 7 meters	61		
Normal operation at 7 meters	65		
Exhaust			
Exhaust flow at rated output 60 Hz cfm	557		
Exhaust temp. at muffler outlet °F	890		
Engine Parameters			
Rated synchronous RPM 60 Hz	1800		
HP at rated KW 60 Hz	110.7		
Power Adjustment For Ambient Conditions			
Temperature Duration 3% for every 10 °C above - °C 1.65% for every 10 °F above - °F	 25 77		
Altitude Duration 1% for every 100 m above - m 3% for every 1000 ft. above - ft.	 183 600		

RATING: All three phases units are rated at 0.8 power factor. All single phase units are rated at 1.0 power factor. STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

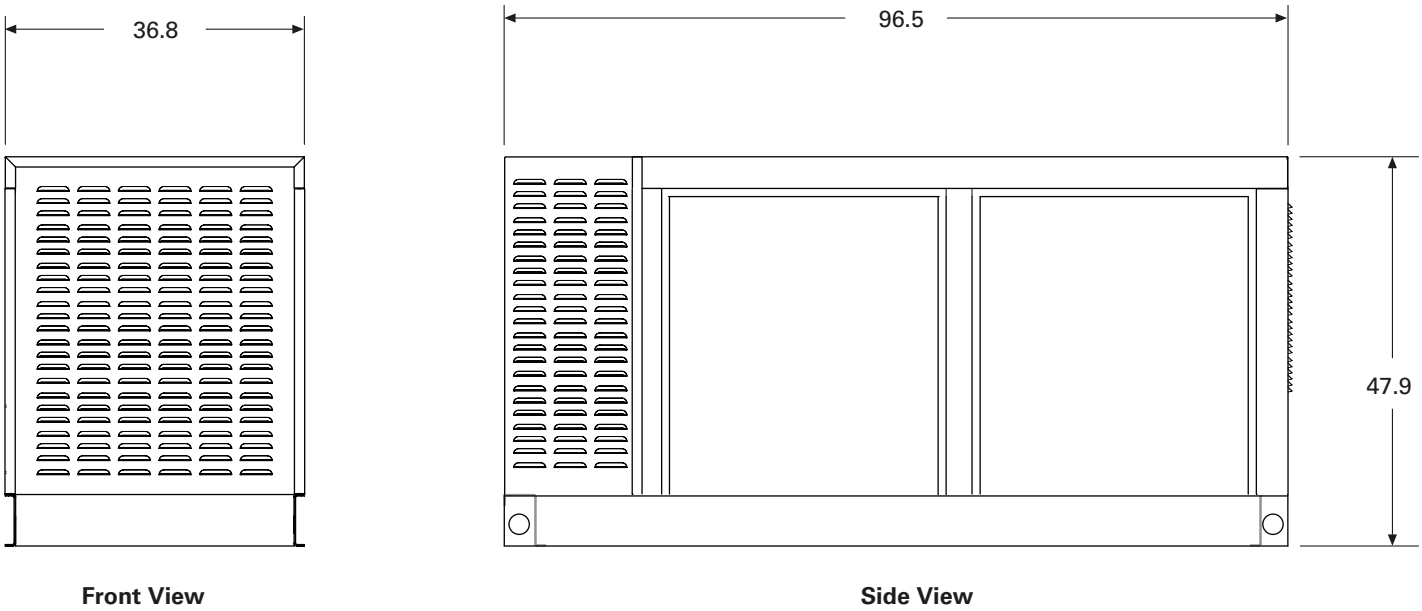

Figure 1. Installation Layout

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