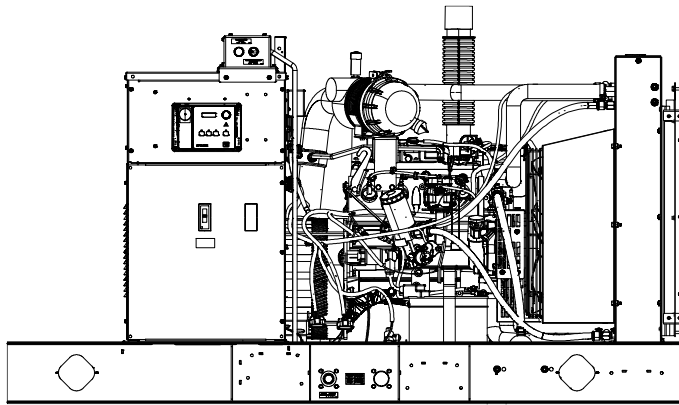


### EPA-Certified for Stationary Emergency Applications

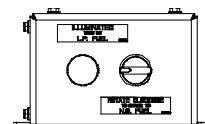
### Ratings Range

Standby:		60 Hz
	kW kVA	34-40 34-50



### Standard Features

- Rehiko provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set accepts rated load in one step.
- A one-year limited warranty covers all generator set systems and components. Two- and Five-year basic, five-year comprehensive and ten-year extended limited warranties are also available for purchase in some jurisdictions.
- Alternator features:
  - Wound field excitation system with its unique PowerBoost™ design delivers great voltage response and short-circuit capability.
  - The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless and rotating-field alternator has broadrange reconnectability.
- Certifications
  - cULus listing is available.
  - The generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- Natural gas, LP gas, and dual fuel models are available.
- Dual fuel model features:
  - Natural gas is the primary fuel. Automatically transfers back to primary fuel when LPG fuel becomes low or generator stops and restarts.
  - The patented reset box on the generator provides the ability to manually transfer back to natural gas.



Dual fuel reset box

## Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise		LP Gas 130°C Rise	
				Standby Rating kW/kVA	Amps	Standby Rating kW/kVA	Amps
4D8.3	120/208	3	60	40/50	139	40/50	139
	120/240	3	60	40/50	121	40/50	121
	120/240	1	60	34/34	142	34/34	142
	277/480	3	60	40/50	61	40/50	61
	347/600	3	60	40/50	49	40/50	49
4P7BX	120/208	3	60	40/50	139	40/50	139
	120/240	3	60	40/50	121	40/50	121
	120/240	1	60	40/40	167	40/40	167
	277/480	3	60	40/50	61	40/50	61
4E8.3	120/240	1	60	40/40	167	40/40	167
4Q7BX	120/240	1	60	40/40	167	40/40	167

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* 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-8528-1 and ISO-3046-1. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. For dual fuel engines, use the natural gas ratings for both the primary and secondary fuels.

## Alternator Specifications

Specifications	Alternator
Exciter type	Brushless, Wound Field (4D, 4E) Brushless Rare-Earth Permanent Magnet (4P, 4Q)
Leads: quantity, type	
4D	12, Reconnectable
4E	4, 110-120/220-240 V
4PX	12, Reconnectable
4QX	4, 110-120/220-240 V
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V 4D8.3 (12 lead)	120
240 V 4E8.3 (4 lead)	74
480 V 4P7BX (12 lead)	180
240 V 4Q7BX (4 lead)	113

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and drip-proof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

## Application Data

### Engine

Engine Specifications	60 Hz
Engine: Model type	2.2 L, 4-Cycle, KG02L04T-6DXS
Turbocharged and Aftercooled	KG02L04T-6DGS
Turbocharged and Aftercooled with Catalyst	
Cylinder arrangement	In-line 4
Displacement, L (cu. in.)	2.2 (134.25)
Bore and stroke, mm (in.)	91 x 86 (3.5 x 3.4)
Compression ratio	10.5:1
Piston speed, m/min. (ft./min.)	340 (1016)
Main bearings: quantity, type	5, plain alloy steel
Rated rpm	1800
Max. power at rated RPM, kW (HP)	51.4 (68.9)
Cylinder head material	Cast Iron
Piston type and material	High Silicon Aluminum
Crankshaft material	Nodular Iron
Valve (exhaust) material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±1.0%
Frequency	Fixed
Air cleaner type, all models	Dry

### Engine Electrical

Engine Electrical System	60 Hz
Ignition system	Coil Pack
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	90
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Qty., rating for -18°C (0°F)	One, 650
Battery voltage (DC)	12

### Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW m <sup>3</sup> /min (cfm)	8.8 (310.8)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	650 (1202)
Maximum allowable overall back pressure, kPa (in. Hg)	5.0 (1.48)
Maximum allowable back pressure, after the silencer or catalyst, kPa (in. Hg)	2.8 (0.83)
Exhaust outlet size at engine hookup, mm (in.)	See ADV Drawing

### Fuel

Fuel System	
Fuel type	Natural gas, LP gas, or dual fuel.
Fuel supply line inlet (in.)	1 in. NPTF
Fuel inlet pressure, all fuel, kPa (in. H <sub>2</sub> O)	1.24-2.74 (5-11)

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C <sub>4</sub> and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	33.2 (890)	84.2 (2260)

\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

## Application Data

### Lubrication

#### Lubricating System

Type	Full Pressure
Oil pan capacity, L (qt.) §	4.2 (4.4)
Oil pan capacity with filter and cooler L (qt.) §	4.75 (5.0)
Oil filter: quantity, type §	One, Cartridge
§ Rehko recommends the use of Rehko Genuine oil and filters.	

### Cooling

Radiator System	Nat. Gas	LP Gas
Ambient temperature, Open, °C (°F)*	50 (122)	
Engine jacket water capacity, L (gal.)	2.7 (0.71)	
Radiator system capacity, including engine, L (gal.)	12.08 (3.2)	
Engine jacket water flow, Lpm (gpm)	59.8 (15.8)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	29.1 (1655)	30.5 (1735)
Heat rejected to charge air cooler at rated kW, dry exhaust, kW (Btu/min.)	2.58 (146.7)	3.2 (182.0)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	508 (20)	
Fan, kWm (HP)	2.3 (3.08)	
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	See TIB-118	

\* Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).

## Operation Requirements

Air Requirements	Nat. Gas	LP Gas
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm) †	140 (4944)	
Combustion air, m <sup>3</sup> /min. (cfm)	2.13 (75.2)	2.21 (78.0)
Heat rejected to ambient air, kW (Btu/min.)		
Engine	35.6 (2025)	37.9 (2155)
Alternator	5.20 (296)	5.20 (296)
† Air density = 1.20 kg/m <sup>3</sup> (0.075 lbm/ft <sup>3</sup> )		

#### Fuel Consumption‡

Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings
100%	14.9 (526)
75%	9.9 (350)
50%	6.3 (222)
25%	4.5 (159)
0%	3.8 (134)
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings
100%	5.5 (194)
75%	4.0 (141)
50%	2.6 (92)
25%	2.0 (71)
0%	1.5 (53)

‡ Nominal fuel rating: Natural gas, 37 MJ/m<sup>3</sup> (1000 Btu/ft.<sup>3</sup>)  
LP vapor, 93 MJ/m<sup>3</sup> (2500 Btu/ft.<sup>3</sup>)

LP vapor conversion factors:

8.58 ft.<sup>3</sup> = 1 lb.

0.535 m<sup>3</sup> = 1 kg.

36.39 ft.<sup>3</sup> = 1 gal.

## Controller



### APM402 Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-161 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

### Standard Features

- Air Cleaner Restrictor Indicator
- Alternator Protection
- Battery Rack and Cables
- Dual Fuel Reset Box (standard on dual fuel models)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Low Fuel Pressure Switch
- Open Unit Accessory Kit- Non-catalyst (radiator duct flange, stone guard, and flexible exhaust)
- Open Unit Accessory Kit- Catalyst (radiator duct flange, stone guard, flexible exhaust, and three-way catalyst)
- Operation and Installation Literature
- UL Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)

### Available Options

#### Approvals and Listings

- ☐ cULus (UL 2200 and CSA)
- ☐ IBC Seismic Certification
- ☐ Hurricane Rated Enclosure (Available with Aluminum Sound Enclosure Only)

#### Controller

- ☐ Communication Products
- ☐ Input/Output Module (2 inputs, 5 outputs)
- ☐ Lockable Emergency Stop
- ☐ Manual Speed Adjust
- ☐ Remote Annunciator Panel
- ☐ Remote Emergency Stop
- ☐ Run Relay, 12V

#### Enclosed Unit

- ☐ Sound Enclosure (with enclosed critical silencer)
- ☐ Sound Enclosure (with enclosed critical silencer and three-way catalyst)
- ☐ Weather Enclosure (with enclosed critical silencer)
- ☐ Weather Enclosure (with enclosed critical silencer and three-way catalyst)

#### Open Unit

- ☐ Exhaust Silencer, Critical (kit: PA-352663)
- ☐ Flexible Exhaust Connector, Stainless Steel

#### Cooling System\*

- ☐ Block Heater, 500W, 120V, 1Ph

#### Oil Pan Heater\*

- ☐ Oil Pan Heater, 150W, 110-120 V

\* One block heater or oil pan heater is required for ambient temperatures below 0°C (32°F). At temperatures below -18°C (0°F) installation of both heaters is required.

#### Electrical System

- ☐ Alternator Strip Heater, 120V
- ☐ Battery
- ☐ Battery Charger, (6A or 10A)
- ☐ Battery Heater, 120V
- ☐ Line Circuit Breaker (NEMA1 enclosure)
- ☐ Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- ☐ Temperature Compensation for 10A Battery Charger

#### Fuel System

- ☐ Flexible Fuel Line, Dual Fuel NG/LPG
- ☐ Flexible Fuel Line, Single Fuel NG/LPG
- ☐ Fuel Filter Kit

### Miscellaneous

- ☐ Certified Test Report
- ☐ Engine Fluids (oil and coolant) Added
- ☐ Rated Power Factor Testing
- ☐ Rodent Guards

### Literature

- ☐ General Maintenance
- ☐ NFPA 110
- ☐ Overhaul
- ☐ Production

### Warranty

- ☐ 2-Year Basic Limited Warranty
- ☐ 5-Year Basic Limited Warranty
- ☐ 5-Year Comprehensive Limited Warranty
- ☐ 10-Year Extended Limited Warranty

### Other Options

- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_

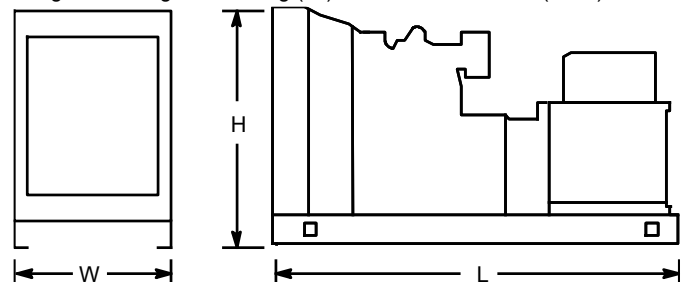
### Dimensions and Weights

Overall Size, L x W x H, mm (in.):

Wide Skid 2200 x 1040 x 1565 (86.6 x 40.9 x 61.6)

Narrow Skid 2200 x 865 x 1565 (86.6 x 34.1 x 61.6)

Weight, with engine fluids, kg (lb.): 630 (1390)



NOTE: This drawing is provided for reference only and should not be used for planning. Contact your local distributor for more detailed information.