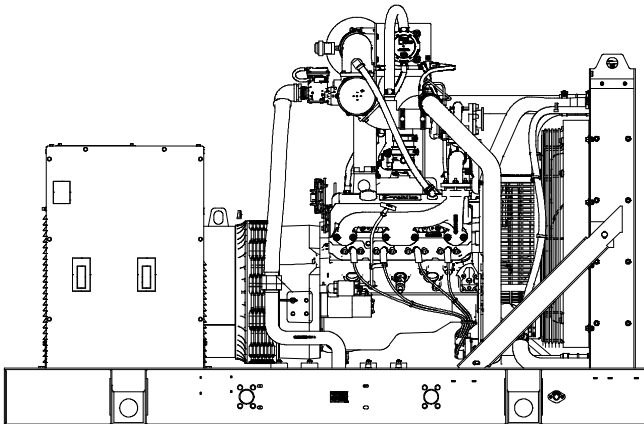


EPA Certified for Stationary Emergency and Non-Emergency Applications

Standby Rating – Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	kW	100
	kVA	100-125



Generator Specifications

Orderable Generator Model Number: GMKG100-A

Standard Features

- 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 offers a cULus listing (UL 2200 and CSA C22.2 No. 100).
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- A 2-year warranty covers all generator set systems and components.
 - Extendable to a five-year comprehensive warranty with a registered service contract through a distributor, dealer, or authorized service representative.
- Five-year basic, five-year comprehensive, and 10-year major component limited warranties are also available for purchase in some jurisdictions.
- 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 reset knobs in the controller box provide the ability to transfer back to natural gas manually.
 - Automatic dual-fuel NG/LP system is available.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise Standby Rating		LP Gas 130°C Rise Standby Rating	
				kW/kVA	Amps	kW/kVA	Amps
KH01281TO4D	120/240	3	60	100/125	301	100/125	301
	277/480	3	60	100/125	151	100/125	151
	347/600	3	60	100/125	121	100/125	121
	120/208	3	60	100/125	347	100/125	347
KH01025TO4D	120/240	3	60	100/125	301	100/125	301
	277/480	3	60	100/125	151	100/125	151
	347/600	3	60	100/125	121	100/125	121
	120/208	3	60	100/125	347	100/125	347
KH01025MO4D	120/240	1	60	100/100	417	100/100	417

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. For limited running time and continuous ratings, consult the factory. 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.

Application Data

Engine

Engine Specifications

Manufacturer	Rehiko
Engine: model, type	KG06V08T-6DGS 4- Cycle, Turbocharged, Charge Air Cooled
Cylinder arrangement	V-8
Displacement, L (cu. in.)	6.2 (378)
Bore and stroke, mm (in.)	102 x 95 (4.00 x 3.75)
Compression ratio	9.8:1
Piston speed, m/min. (ft./min.)	343 (1125)
Main bearings: quantity, type	5, Tri-Metal
Rated rpm	1800
Max. power at rated rpm, kW (HP)	
NG	152 (203)
LP	131 (175)
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.75%
Frequency	Fixed
Air cleaner type, all models	Dry

Lubrication

Lubricating System

Type	Full Pressure
Oil pan capacity, L (qt.) §	5.2 (5.5)
Oil pan capacity with filter and oil cooler, L (qt.) §	7.4 (7.8)
Oil filter: quantity, type §	1, Spin-on
§ Rehiko recommends the use of Rehiko Genuine oil and filters.	

Fuel

Fuel System

Fuel type	Natural Gas, LP Gas, or Dual Fuel
Max. fuel flow, m³/hr. (cfh)	
NG	35.6 (1258)
LP	16.6 (587)
Fuel supply line inlet	1.5 in. NPTF
Natural gas fuel supply pressure, kPa (in. H ₂ O)	1.74-2.74 (7-11)
LPG vapor withdrawal fuel supply pressure, kPa (in. H ₂ O)	1.74-2.74 (7-11)

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 ₄ and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m³ (Btu/ft³), 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 authorized distributor for further analysis and advice.

Fuel Consumption‡

Natural Gas, m³/hr. (cfh) at % load	Standby Ratings
100%	35.6 (1257)
75%	28.5 (1006)
50%	21.5 (759)
25%	14.5 (512)

LP Gas, m³/hr. (cfh) at % load	Standby Ratings
100%	16.6 (586)
75%	12.8 (452)
50%	9.0 (318)
25%	5.9 (208)

‡ Nominal fuel rating: Natural gas, 37 MJ/m³ (1000 Btu/ft.³)
LP vapor, 93 MJ/m³ (2500 Btu/ft.³)

LP vapor conversion factors:
8.58 ft.³ = 1 lb.
0.535 m³ = 1 kg.
36.39 ft.³ = 1 gal.

Cooling

Radiator System

Ambient temperature, °C (°F)*	50 (122)
Engine jacket water capacity, L (gal.)	7.3 (2.0)
Radiator system capacity, including engine, L (gal.)	18.6 (5.0)
Engine jacket water flow, Lpm (gpm)	107 (28.4)
Charge air cooler inlet temperature at 25°C (77°F) ambient, °C (°F)	146 (294)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	80.0 (4551)
Heat rejected to charge cooling air at rated kW, dry exhaust, kW (Btu/min.)	18 (1049)
Turbocharger boost (abs) kPa (psi)	235 (35)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	600 (23.7)
Fan, kWm (HP)	7 (10)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	See TIB-118

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

Exhaust

Exhaust System

Exhaust manifold type	Dry
Exhaust flow at rated kW, m³/min. (cfm)	24.0 (848)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	692 (1277)
Maximum allowable overall back pressure, kPa (in. Hg)	See TIB-119
Exhaust outlet size at engine hookup, mm (in.)	See ADV drawing

Application Data

Engine Electrical

Engine Electrical System

Ignition system	Spark Ignition, Coil Pack
Battery charging alternator:	12 Volt
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	130
Starter motor qty. at starter motor power rating	1
Battery, recommended cold cranking amps (CCA):	
Qty., rating for - 18°C (0°F)	One, 750
Battery voltage (DC)	12

Operation Requirements

Air Requirements

Radiator-cooled cooling air, m ³ /min. (scfm)†	249 (8802)
Combustion air, m ³ /min. (cfm)	6.9 (244)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	60 (3438)
Alternator, kW (Btu/min.)	See TIB-102
Max. combustion air restriction, kPa (in. H ₂ O)	2.5 (10)
† Air density = 1.20 kg/m ³ (0.075 lbm/ft ³)	

Alternator Specifications

Specifications	Alternator
Manufacturer	Rehiko
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Auxiliary Winding, Brushless, permanent magnet exciter (optional)
Voltage regulator	Solid State, Volts/Hz
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	See alternator datasheet, TIB-102

Note: For additional alternator information, refer to TIB-102.

- The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
- 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 polyester resin for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

NOTE: See TIB-102 Alternator Data Sheets for alternator application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves.

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



APM603 Controller

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

- 7-inch graphic display with touch screen and menu control provides easy local data access
- Measurements are selectable in metric or English units
- Paralleling capability to control up to 8 generators on an isolated bus with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
Note: Parallel with other APM603 controllers only
- Generator management to turn paralleled generators off and on as required by load demand
- Load management to connect and disconnect loads as required
- Controller supports Modbus® RTU, Modbus® TCP, SNMP and BACnet®
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- UL-listed overcurrent protective device
- NFPA 110 Level 1 capability

Refer to G6-162 for additional controller features and accessories.

BACnet® is a registered trademark of ASHRAE.

Standard Features

- Air Cleaner Restrictor Indicator
- Alternator Protection
- Battery Rack and Cables
- Direct Fuel Connection to Skid
- Electronic, Isochronous Governor
- Engine Fluids Added
- 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)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Open Unit Accessory Kit (radiator duct flange, flexible exhaust)
- Rodent Guards
- Three-way Exhaust Catalyst

Available Options

Load Connection Option

- ☐ Bus Bar
- ☐ Generator Mounted Circuit Breaker
 - ☐ AIC Rating: 18 kAIC @480V, 35 kAIC @480V
 - ☐ Duty Cycle: 80%, 100%
 - ☐ Trip Unit: Thermal Magnetic, Electronic Trip (LSI or LSIG)
- ☐ Generator Mounted Paralleling Circuit Breaker (Electrically Operated)
 - ☐ AIC Rating: 35 kAIC
 - ☐ Duty Cycle: 100%
 - ☐ Trip Unit: Electronic Trip LSI

Approvals and Listings

- ☐ cULus (UL 2200 and CSA)
- ☐ Hurricane Rated Enclosure
- ☐ IBC Seismic Certification

Enclosed Unit

- ☐ Sound Enclosure (with enclosed critical silencer)
- ☐ Weather Enclosure (with enclosed critical silencer)

Open Unit

- ☐ Exhaust Silencer, Critical (kit: PA-324470)
- ☐ Flexible Exhaust Connector, Stainless Steel

Fuel System

- ☐ Dual Fuel NG/LPG (automatic changeover)
- ☐ Flexible Fuel Line
- ☐ Fuel Filter Kit

Controller

- ☐ Common Failure Relay (Optional for APM402, Standard for APM603)
- ☐ Four Input/Fifteen Output Module
- ☐ Local Emergency Stop Switch
- ☐ Manual Key Switch (APM603 only)
- ☐ Manual Speed Adjust (APM402 only)
- ☐ Remote Emergency Stop
- ☐ Run Relay (Optional for APM402, Standard for APM603)
- ☐ Remote Annunciator Panel
- ☐ Two Input/Five Output Module (APM402 only)

Starting Aids

- ☐ Block Heater, 1500 W, 110-120 V
Required for ambient temperatures below 10°C (50°F)

Electrical System

- ☐ Generator (Alternator Strip) Heater
- ☐ Battery
- ☐ Battery Charger (6A or 10A)
- ☐ Temperature Compensation for 10A Battery Charger
- ☐ Battery Heater

Miscellaneous

- ☐ Certified Test Report
- ☐ Rated Power Factor Testing

Literature

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

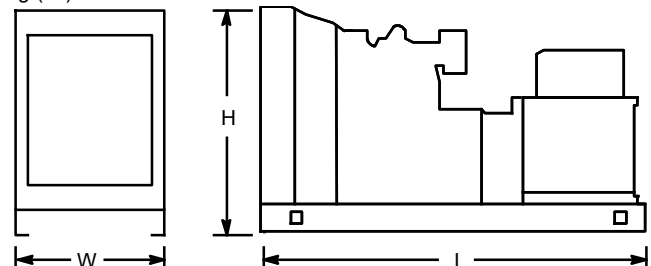
Warranty

- ☐ 5-Year Basic Limited Warranty
- ☐ 5-Year Comprehensive Limited Warranty
- ☐ 10-Year Major Components Limited Warranty

Dimensions and Weights

Overall Size, L x W x H, max.,
mm (in.): 2250 x 1150 x 1470
(88.6 x 45.3 x 57.9)

Weight (radiator model), wet, max.,
kg (lb.): 1140 (2515)



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