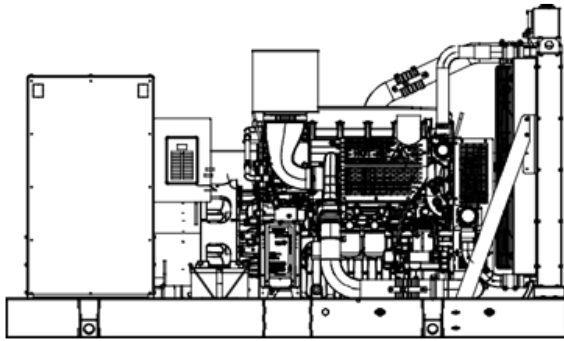




Industrial Diesel Generator Set - KD700

Tier 2 EPA-Certified for Stationary Emergency Applications



KDxxxx designates a generator set with a Tier 2 EPA-Certified engine.
 KDxxxx-F designates a 60 Hz generator set with a fuel optimized engine.

Ratings Range

		60 Hz
Standby:	kW	670-700
	kVA	835-875
Prime:	kW	600-630
	kVA	750-785



Standard Features

- Rehiko provides one-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO) / Renewable Diesel (RD) fuels compliant with EN15940 / ASTM D975.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- 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 standard three-year unlimited-hour limited warranty for standby applications in the U.S. And Canada. Five-year basic, five-year comprehensive, and ten-year extended limited warranties are also available.
- A standard two-year or 8700-hour limited warranty for prime power applications.
- Other features:
 - Rehiko designed controllers for one-source system integration and remote communication. See Controllers on page 4.
 - The low coolant level shutdown prevents overheating (standard on radiator models only).

General Specifications

Orderable Generator Model Number	GMKD700
Manufacturer	Rehiko
Engine: model	KD18L06
Alternator Choices	KH02970TO4D KH03546TO4D
Performance Class	Per ISO 8528-5
One Step Load Acceptance	100%
Voltage	Wye or 600 V
Controller	APM603, APM802
Fuel Tank Capacity, L (gal.)	2028-19021 (550-5025)
Fuel Consumption, L/hr (gal./hr) 100% at Standby	182 (48.1)
Fuel Consumption, L/hr (gal./hr) 100% at Prime Power	160 (42.4)
Emission Level Compliance (KDxxxx)	Tier 2
Open Unit Noise Level @ 7 m dB(A) at Rated Load	92

Conscious Care™ Qualified

- Reduce operating costs, fuel consumption and greenhouse gas emissions with Conscious Care™ maintenance program.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
KH02970TO4D	120/208	3	60	700/875	2429	700/875	2429	630/785	2186	630/785	2186
	127/220	3	60	700/875	2297	700/875	2297	630/785	2067	630/785	2067
	139/240	3	60	700/875	2105	700/875	2105	630/785	1895	630/785	1895
	220/380	3	60	700/875	1330	670/835	1273	630/785	1197	610/760	1159
	230/400	3	60	700/875	1263	695/865	1254	630/785	1137	630/785	1137
	240/416	3	60	700/875	1215	700/875	1215	630/785	1093	630/785	1093
	254/440	3	60	700/875	1149	700/875	1149	630/785	1034	630/785	1034
	277/480	3	60	700/875	1053	700/875	1053	630/785	948	630/785	948
	347/600	3	60	700/875	842	700/875	842	630/785	758	630/785	758

RATINGS: All three-phase units are rated at 0.8 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. *Prime Power Ratings:* At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. 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.



Industrial Diesel Generator Set - KD700

Tier 2 EPA-Certified for Stationary Emergency Applications

Generator Set Ratings, continued

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
KH03546TO4D	120/208	3	60	700/875	2429	700/875	2429	630/785	2186	630/785	2186
	127/220	3	60	700/875	2297	700/875	2297	630/785	2067	630/785	2067
	139/240	3	60	700/875	2105	700/875	2105	630/785	1895	630/785	1895
	220/380	3	60	625/780	1187	620/775	1178	610/760	1159	560/700	1064
	230/400	3	60	675/840	1218	670/835	1209	630/785	1137	600/750	1083
	240/416	3	60	700/875	1215	700/875	1215	630/785	1093	630/785	1093
	254/440	3	60	700/875	1149	700/875	1149	630/785	1034	630/785	1034
	277/480	3	60	700/875	1053	700/875	1053	630/785	948	630/785	948
	347/600	3	60	670/835	806	670/835	806	630/785	758	605/755	728

Engine Specifications	60 Hz
Engine: model	KD18L06
Engine: type	4-Cycle, Turbocharged, Charge Air Cooled
Cylinder arrangement	6 Inline
Displacement, L (cu. in.)	17.960 (1096)
Bore and stroke, mm (in.)	148 x 174 (5.8 x 2.9)
Compression ratio	16.5:1
Piston speed, m/min. (ft./min.)	626 (2055)
Main bearings: quantity, type	7, Precision Half Shells
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	785 (1053)
Cylinder head material	Cast Iron
Crankshaft material	Steel
Valve (exhaust) material	Steel
Governor: type, make/model	KODEC Electronic Control
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

Lubricating System	60 Hz
Type	Full Pressure
Oil pan capacity with filter initial fill, L (qt.) §	97 (102.4)
Oil filter: quantity, type §	2, Cartridge
Oil cooler	Water-Cooled
§ Rehiko recommends the use of Rehiko Genuine oil and filters.	

Fuel System	60 Hz
Fuel supply line, min. ID, mm (in.)	12 (0.47)
Fuel return line, min. ID, mm (in.)	8 (0.31)
Max. fuel flow, Lph (gph)	277 (73)
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-30/30 (-8.8/8.8)
Max. return line restriction, kPa (in. Hg)	30 (8.9)
Fuel filter: quantity, type	1, Primary Engine Filter 1, Fuel/Water Separator
Recommended fuel	#2 Diesel ULSD/HVO/RD

Fuel Consumption**	60 Hz	
Diesel, Lph (gph) at % load	Standby Rating	
	100%	182 (48.1)
	75%	145 (38.2)
	50%	98 (25.9)
25%	51 (13.4)	
Diesel, Lph (gph) at % load	Prime Rating	
	100%	160 (42.4)
	75%	120 (31.6)
	50%	82 (21.7)
25%	46 (12.1)	
** Volumetric fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.		

Radiator System	60 Hz
Ambient temperature, °C (°F)*	50 (122)
Radiator system capacity, including engine, L (gal.)	75.7 (20)
Engine jacket water capacity, L (gal.)	39.5 (10.4)
Engine jacket water flow, Lpm (gpm)	780 (206.1)
Charge cooler air inlet temperature at 25°C (77°F) ambient, °C (°F)	237 (459)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	258 (14685)
Heat rejected to charge air cooler at rated kW, dry exhaust, kW (Btu/min.)	208 (11834)
Turbocharger boost (abs), bar (psi)	3.0 (43)
Water pump type	Vane Wheel
Fan diameter, including blades, mm (in.)	1118 (44)
Fan, kWm (HP)	24 (32.2)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)
* Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).	

Remote Radiator System†	60 Hz
Exhaust manifold type	Dry
Water inlet/outlet, mm (in.)	76 (3)
Charge air cooler inlet/outlet (pipe dia. of flange), mm (in.)	127 (5)
Static head allowable above engine, kPa (ft. H ₂ O)	150 (50.2)
† Contact your local distributor for cooling system options and specifications based on your specific requirements.	



Industrial Diesel Generator Set - KD700

Tier 2 EPA-Certified for Stationary Emergency Applications

Exhaust System	60 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)	134 (4729)
Exhaust temperature at rated kW at 25°C (77°F) ambient, dry exhaust, °C (°F)	521 (970)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing

Electrical System	60 Hz
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	24
Ampere rating	140
Starter motor qty. at starter motor power rating, rated voltage (DC)	Standard: 1 @ 8. kW, 24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each, type (with standard starters)	2,925, WET
Battery voltage (DC)	12

Air Requirements	60 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)‡	876 (30900)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise, m ³ /min. (scfm)‡	433 (15291)
Combustion air, m ³ /min. (cfm)	52.3 (1847)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	85 (4838)
Alternator, kW (Btu/min.)	37 (2106)
‡ Air density = 1.20 kg/m ³ (0.075 lbm/ft ³)	

Alternator Specifications	60 Hz
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet Pilot Exciter
Voltage regulator	Solid-State, Volts/Hz
Insulation:	NEMA MG1, UL 1446, Vacuum Pressure Impregnated (VPI)
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling type	Flexible Disc
Amortisseur windings	Full
Alternator winding type	Random Wound
Rotor balancing	125%
Voltage regulation, no-load to full-load	±0.25%
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	KH02970TO4D 2717
480 V	KH03546TO4D 2399

Alternator Standard Features

- The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
- All models are brushless, rotating-field alternators.
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and drip-proof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Brushless alternator with brushless pilot exciter for excellent load response.

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.

Controllers



APM802 Controller

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

- 12-inch graphic display with touch screen and menu control provide easy local data access
- Measurements are selectable in metric or English units
- User language is selectable
- Two USB ports allow connection of a flash drive, mouse, or keypad
- Electrical data, mechanical data, and system settings can be saved to a flash drive
- Ethernet port allows connection to a PC type computer or Ethernet switch
- The controller supports Modbus® RTU and TCP protocols
- NFPA 110 Level 1 capability

Refer to G6-152 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 $\pm 0.25\%$ 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.

Codes and Standards

- Engine-generator set is designed and manufactured in facilities certified to ISO 9001.
- Generator set meets NEMA MG1, BS5000, ISO, DIN EN, and IEC standards, NFPA 110.
- Engine generator set is tested to ISO 8528-5 for transient response.
- The generator set and its components are prototype-tested, factory-built, and production-tested.

Third-Party Compliance

- Tier 2 EPA-Certified for Stationary Emergency Applications

Available Approvals and Listings

- California OSHPD Pre-Approval
- cULus (UL 2200 and CSA C22.2 No.100)
- Florida Dept. Of Environmental Protection (FDEP) Compliance (fuel tank only)
- IBC Seismic Certification

Warranty Information

- A standard three-year unlimited-hour limited warranty for standby applications in the U.S. And Canada. Five-year basic, five-year comprehensive, and ten-year extended limited warranties are also available.
- A standard two-year or 8700-hour limited warranty for prime power applications.

Available Warranties for Standby Applications

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

Standard Features

- Closed Crankcase Ventilation (CCV) Filters
- Customer Connection
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain and Coolant Drain Extension
- Operation and Installation Literature
- Battery Rack and Cables
- Fuel/Water Separator

Available Options

Circuit Breakers

- | | |
|--|--|
| Type | Rating |
| <input type="checkbox"/> Magnetic Trip | <input type="checkbox"/> 80% |
| <input type="checkbox"/> Thermal Magnetic Trip | <input type="checkbox"/> 100% |
| <input type="checkbox"/> Electronic Trip (LI) | Operation |
| <input type="checkbox"/> Electronic Trip with Short Time (LSI) | <input type="checkbox"/> Manual |
| | <input type="checkbox"/> Electrically Operated (for paralleling) |

Circuit Breaker Mounting

- Generator Mounted
- Remote Mounted
- Bus Bar (for remote mounted breakers)

Enclosed Remote Mounted Circuit Breakers

- NEMA 1 (15-5000 A)
- NEMA 3R (15-1200 A)

Engine Type

- KDxxxx Tier 2 EPA-Certified Engine
- KDxxxx-F Fuel Optimized Engine

Approvals and Listings

- California OSHPD Pre-Approval
- cULus (UL 2200 and CSA C22.2 No. 100)
- Florida Dept. of Environmental Protection (FDEP) Compliance (fuel tanks only)
- Hurricane Rated Enclosure
- IBC Seismic Certification

Enclosed Unit

- Sound Level 1 Enclosure/Fuel Tank Package
- Sound Level 2 Enclosure/Fuel Tank Package
- Sound Level 3 Enclosure/Fuel Tank Package

Open Unit

- Exhaust Silencer, Critical (kits: PA-354894 qty. 1)
- Exhaust Silencer, Hospital (kits: PA-354907 qty. 1)
- Exhaust Silencer, Residential (kits: PA-354892 qty. 1)
- Flexible Exhaust Connector, Stainless Steel

Controller

- Input/Output, Digital
- Load Shed (APM802 only)
- Manual Key Switch
- Remote Emergency Stop Switch
- Lockable Emergency Stop Switch
- Remote Serial Annunciator Panel

Cooling System

- Block Heater; 3000 W, 208 V, (select 1 Ph)*
 - Block Heater; 3250 W, 240 V, (select 1 Ph)*
 - Block Heater; 3000 W, 480 V, (select 1 Ph)*
- * Required for ambient temperatures below 10°C (50°F).
Block heater kit includes air intake manifold grid heater.
- Radiator Guard and Duct Flange

Electrical System

- Battery, 2/12V, Wet
- Battery Charger
- Battery Heater; 80 W, 120 V, 1Ph
- Generator Heater

Fuel System

- Flexible Fuel Lines
- Restriction Gauge (for fuel/water separator)

Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

Miscellaneous

- Air Cleaner, Heavy Duty (loose)
- Air Cleaner Restriction Indicator
- Automatic Oil Replenishment System
- Centrifugal Oil Filter Assembly
- Rated Power Factor Testing

Electrical Package (Requires Enclosure selection)

- Basic Electrical Package (select 1 Ph)
- Wire Battery Charger (1 Ph)
- Wire Block Heater (select 1 Ph)
- Wire Controller Heater (1 Ph)
- Wire Generator Heater (1 Ph)

Warranty (Standby Applications only)

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

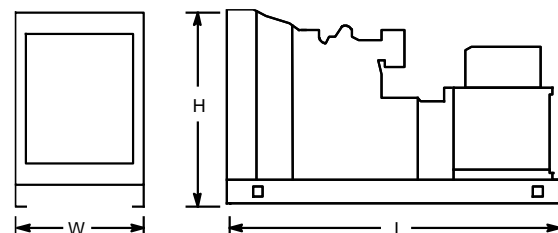
Other

-
-

Dimensions and Weights

Overall Size, max., L x W x H, mm (in.): 3600 x 1900 x 2151
(141.7 x 74.8 x 84.7)

Weight, radiator model, max. wet, kg (lb.): 5600 (12345)

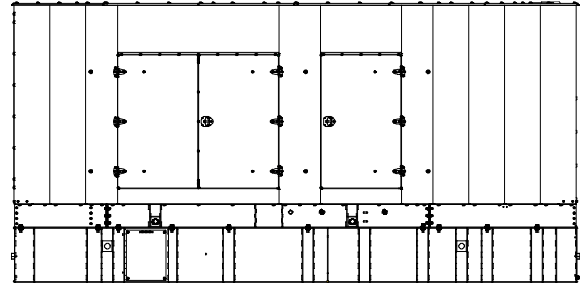


NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

Sound Enclosures and Subbase Fuel Tank

Sound Level 1 Enclosure Standard Features

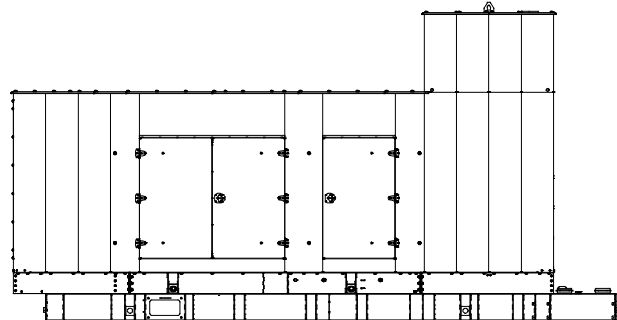
- Internal silencers with flexible exhaust connectors and exhaust elbows.
- Optional subbase fuel tank.
- Fade-, scratch-, and corrosion-resistant Power Armor™ automotive-grade textured finish.
- Acoustic insulation that meets UL 94 HF1 flammability classification.
- Aluminum construction with large access doors that are hinged for easy maintenance.
- Lockable, flush-mounted door latches.
- Air inlet louvers reduce rain and snow entry.
- Vertical outlet hood with 90 degree angles to redirect air and reduce noise.
- Sound level 1 enclosure is designed to 150 mph (241 kph) wind load rating.



Sound Level 1 and 2 Enclosure

Sound Level 2 Enclosure Standard Features

- Includes all of the sound level 1 enclosure features with the addition of up to 51 mm (2 in.) acoustic insulation material, intake sound baffles, vertical air discharge, and secondary silencers.
- Sound level 2 enclosure is certified to 200 mph (322 kph) wind load rating.



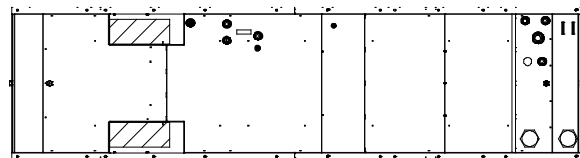
Sound Level 3 Enclosure

Sound Level 3 Enclosure Standard Features

- Includes all of the sound level 1 and 2 enclosure features.
- Sound level 3 enclosure has extended intake baffles, extended discharge with sound baffles.

Subbase Fuel Tank Features

- The fuel tank has a Power Armor Plus™ textured epoxy-based rubberized coating.
- The above-ground rectangular secondary containment tank mounts directly to the generator set, below the generator set skid (subbase).
- Both the inner and outer tanks have UL-listed emergency relief vents.
- Flexible fuel lines are provided with subbase fuel tank selection.
- The containment tank's construction protects against fuel leaks or ruptures. The inner (primary) tank is sealed inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.
- The above ground secondary containment subbase fuel tank meets UL 142 requirements.
- State tanks with varying capacities are available. Florida Dept. Of Environmental Protection (FDEP) File No. EQ-634 approved.



Subbase Fuel Tank (Top View)