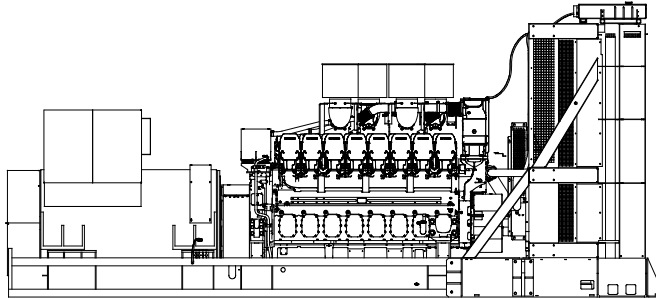


KDxxxx-YF designates a 50 Hz generator set with a fuel optimized engine.



Ratings Range

		50 Hz
Standby:	kW	2400
	kVA	3000
Prime:	kW	2176
	kVA	2720

Standard Features

- Kohler Co. 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 standard three-year or 1000-hour limited warranty for standby applications. 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:
 - Kohler 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	GMKD2800
Manufacturer	Kohler
Engine: model	KD83V16
Alternator Choices	KH07631TO4D
Performance Class	Per ISO 8528-5
One Step Load Acceptance	100%
Voltage	380 V, 415 V, 3300 V, 11000 V
Controller	APM603, APM802
Fuel Consumption, L/hr (gal./hr) 100% at Standby	617 (162.9)
Fuel Consumption, L/hr (gal./hr) 100% at Prime Power	530 (140.0)
Data Center Continuous (DCC) Rating (Refer to TIB-101 for definitions)	Same as the Standby Rating below

Generator Set Ratings

Alternator	Voltage	Ph	Hz	130°C Rise Standby Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
KH07631TO4D	220/380	3	50	2400/3000	4559	2176/2720	4133
	240/415	3	50	2400/3000	4174	2176/2720	3785
	1905/3300	3	50	2400/3000	525	2176/2720	476
	6350/11000	3	50	2400/3000	158	2176/2720	143

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.

Engine Specifications	50 Hz
Manufacturer	Kohler
Engine: model	KD83V16
Engine: type	4-Cycle, Turbocharged, Intercooled
Cylinder arrangement	16-V
Displacement, L (cu. in.)	83 (5048)
Bore and stroke, mm (in.)	175 x 215 (6.89 x 8.46)
Compression ratio	16.0:1
Piston speed, m/min. (ft./min.)	645 (2116)
Main bearings: quantity, type	9, Precision Half Shells
Rated rpm	1500
Max. power at rated rpm, kWm (BHP)	2663 (3570)
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	50 Hz
Type	Full Pressure
Oil pan capacity with filter (initial fill), L (qt.)§	420 (444)
Oil filter: quantity, type§	8, Cartridge
Oil cooler	Water-Cooled
§ Kohler recommends the use of Kohler Genuine oil and filters.	

Fuel System	50 Hz
Fuel supply line, min. ID, mm (in.)	25 (1.0)
Fuel return line, min. ID, mm (in.)	19 (0.75)
Max. fuel flow, Lph (gph)	835 (221)
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-30/30 (-8.8/8.8)
Maximum diesel fuel lift, m (ft.)	3.7 (12)
Max. return line restriction, kPa (in. Hg)	30 (8.9)
Fuel filter: quantity, type	3, Primary Engine Filter 2, Fuel/Water Separator
Recommended fuel	#2 Diesel ULSD

Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	Standby Rating
100%	617 (162.9)
75%	467 (123.4)
50%	331 (87.4)
25%	191 (50.5)

Diesel, Lph (gph) at % load	Prime Rating
100%	530 (140.0)
75%	413 (109.0)
50%	295 (78.0)
25%	178 (47.0)

Radiator System	50 Hz
Ambient temperature, °C (°F)	40 (104)
Engine jacket water capacity, L (gal.)	375 (99)
Radiator system capacity, including engine, L (gal.)	1192 (315)
Engine jacket water flow, Lpm (gpm)	2256 (596)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1030 (58575)
Charge cooler water flow, Lpm (gpm)	583 (154)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	590 (33553)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	2743 (108)
Fan, kWm (HP)	70 (93.8)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)

Remote Radiator System†	50 Hz
Exhaust manifold type	Dry
Connection sizes:	Class 150 ANSI Flange
Water inlet/outlet, mm (in.)	216 (8.5) Bolt Circle
Intercooler inlet/outlet, mm (in.)	178 (7.0) Bolt Circle
Static head allowable above engine, kPa (ft. H ₂ O)	250 (83.6)

† Contact your local distributor for cooling system options and specifications based on your specific requirements.

Exhaust System	50 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)	533 (18816)
Exhaust temperature at rated kW at 25°C (77°F) ambient, dry exhaust, °C (°F)	477 (891)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing

Electrical System	50 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: 2 @ 9 kW, 24; Redundant (optional) 2 @ 15 kW, 24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each, type (with standard starters)	4, 1110, AGM
Quantity, CCA rating each, type (with redundant starters)	8, 1110, AGM
Battery voltage (DC)	12

Air Requirements	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)‡	3823 (135000)
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)‡	1118 (39476)
Combustion air, m ³ /min. (cfm)	192 (6788)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	133 (7564)
Alternator, kW (Btu/min.)	179 (10200)

‡ Air density = 1.20 kg/m³ (0.075 lbm/ft³)

Alternator Specifications	50 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	2, Sealed
Coupling type	Coupling
Amortisseur windings	Full
Alternator winding type	Form Wound
Rotor balancing	125%
Voltage regulation, no-load to full-load	±0.25%
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
380 V	KH07631TO4D 6782
3300 V	KH07631TO4D 7971
11000 V	KH07631TO4D 8978

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 dripproof 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 standards ISO2008:9001 and ISO2004:14001.
- 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

Available Approvals and Listings

- cULus Listing (fuel tanks only)

Warranty Information

- A standard three-year or 1000-hour limited warranty for standby applications. 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
- Fan Bearing Grease Extension
- Fuel/Water Separator
- Generator Heater
- Local Emergency Stop Switch
- Oil Drain and Coolant Drain Extension
- Operation and Installation Literature
- Spring Isolation Under the Skid

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"/> Electronic Trip with Ground Fault (LSIG) | <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)

Approvals and Listings

- cULus Listing (fuel tanks only)

Open Unit

- Exhaust Silencer, Critical (kits: PA-361617 qty. 2)
- Exhaust Silencer, Hospital (kits: PA-361626 qty. 2)
- 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; 12000 W, 380 V, 3 Ph
Required for ambient temperatures below 10°C (50°F).

Electrical System

- Battery, AGM (kit with qty. 4)
- Battery Charger
- Battery Heater
- Battery Rack and Cables
- Redundant Starters

Fuel System

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

Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

Miscellaneous

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Alternator Air Filter (will reduce generator set output by 5%)
- Automatic Oil Replenishment System
- Engine Fluids (oil and coolant) Added
- Rated Power Factor Testing

Warranty (Standby Applications only)

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

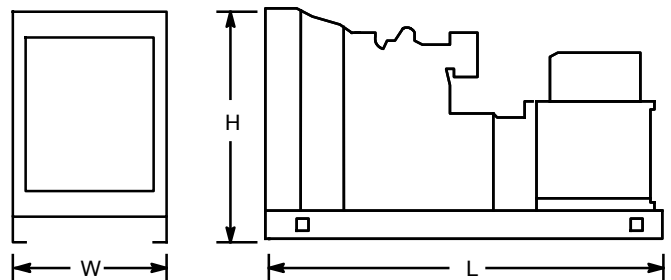
Other

-
-

Dimensions and Weights

Overall Size, max., L x W x H, mm (in.): 7648 x 3172 x 3451
(301.0 x 124.9 x 135.9)

Weight, radiator model, max. wet, kg (lb.): 32513 (71707)



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



Industrial Diesel Generator Set - KD2800-YF
for Stationary Emergency Applications

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

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