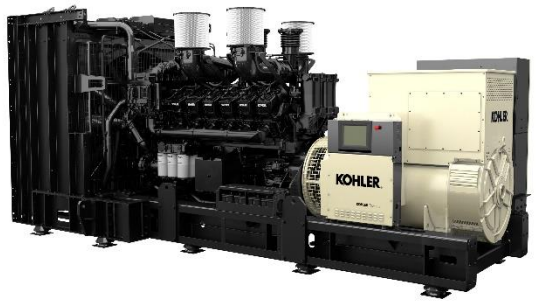
KOHLER®

Industrial Generator Set – KD2500
Fuel Optimized for Stationary Emergency Applications



Ratings Range

		400V-50 Hz
Standby:	**kW**	2000
	kVA	2500
Prime:	**kW**	1818
	kVA	2273

Standard Features

- Kohler Co. 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.
- The generator set accepts rated load in one step.
- A standard three-year or 1000-hour limited warranty for standby applications in Europe, Midde East and Africa..
- A standard two-year or 8700-hour limited warranty for prime power applications.
- A worldwide product support
- Other features:
  - Kohler designed controllers for one-source system integration and remote communication. See Controllers on page 4.

General Specifications

Manufacturer	Kohler
Engine: model	KD62V12A
Alternator Choices	KH05794T KH06932T KH06280T KH07921T KH06280T KH07921T
Performance Class	G3, Per ISO 8528-5
One Step Load Acceptance	100%
Voltage	400V, 10.5kV, 11kV
Controller	M80-D, APM403, APM802
Fuel Consumption, L/h 100% at Standby *	493
Fuel Consumption, L/h 100% at Prime Power *	451
Emission Level Compliance	-
Open Unit Noise Level @ 7 m dB(A) at Rated Load	-
Data Center / Mission Critical Rating	Same as the Standby Rating below
Type of cooling	Unit mounted Radiator Remote Radiator
Factory installed enclosures	CPU40

* Volumetric Fuel consumption is up to 4% higher when using HVO/RD than Diesel Fuel.

Conscious Care™ Qualified

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

Generator Set Ratings

				Without radiator			Standard Unit mounted Radiator		
Alternator	**Voltage**	**Ph**	**Hz**	**kVA**	**kW**	**A**	**kVA**	**kW**	**A**
KH05794T	400V	3	50	2596	2077	2998	2500	2000	2887
KH06932T	400V	3	50	2600	2080	3002	2500	2000	2887
KH06280T	10500V	3	50	2588	2070	114	2500	2000	110
KH07921T	10500V	3	50	2621	2097	115	2500	2000	110
KH06280T	11000V	3	50	2588	2070	109	2500	2000	105
KH07921T	11000V	3	50	2619	2095	110	2500	2000	105

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.
Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit;.

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Engine Specifications	
Manufacturer	Kohler
Engine model	KD62V12A
Engine type	4-Cycle, Turbocharged, Intercooled
Cylinder arrangement	16-V
Displacement, L	62
Bore and stroke, mm	175 x 215
Compression ratio	16.0:1
Rated rpm	1500
Max. power at rated rpm, kWm	2180
Governor: type, make/model	KODEC Electronic Control
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%

Lubricating System	
Type	Full Pressure
Oil filter: quantity, type §	6, Cartridge
Oil cooler	Water-Cooled

§ Kohler recommends the use of Kohler Genuine oil and filters.

Fuel System	
Max. fuel flow, L/h	667
Maximum diesel fuel lift, m	3.5
Fuel filter: quantity, type	3, Primary Engine Filter 2, Fuel/Water Separator
Recommended fuel	#2 Diesel ULSD/HVO/RD

Fuel Consumption

At % load of Engine power rating	g/kWh	l/h**
100%	192	493
75%	197	379
50%	207	266
25%	235	151

** Assumed volumetric fuel consumption with diesel fuel having an LHV of 42.7kJ/kg and weighing 0.85kg/l.

Radiator System	
Ambient temperature, °C	40
Type of coolant	Kohler Genuine coolant
Radiator system capacity, including engine, L	-
Engine coolant	
Engine jacket water capacity, L	180
Heat rejected to cooling water at rated kW, dry exhaust, kW	688
Engine jacket water flow, L/min	1695
Charge-air coolant	
Charge cooler water capacity, L	80
Heat rejected to charge cooling water at rated kW, dry exhaust, kW	450
Charge cooler water flow, L/min	460
Fan diameter, including blades, mm	2007
Fan, kWm	82
Max. restriction of cooling air, intake and discharge side of radiator, kPa at Nominal cooling airflow	0.250

Remote Radiator Connection	
Exhaust manifold type	Dry
Connection sizes:	
Water inlet/outlet, mm (in.)	See drawing
Intercooler inlet/outlet, mm (in.)	Without radiator
Static head allowable above engine, kPa	250

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Exhaust System	
Heat rejected to exhaust, kW	1559
Exhaust temperature at rated kW at 25°C ambient, dry exhaust, °C	478
Exhaust flow at rated kW, l/s.	6439
Maximum allowable backpressure, kPa	8.67
Exh. outlet size at eng. hookup, mm	See ADV drawing

Electrical System	
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	
Radiator-cooled cooling air, m^3/s.‡	35.2
Cooling air required for generator set when equipped with remote radiator, based on 14°C rise, m^3/s.‡	12.8
Combustion air, l/s.	2458
Max. air combustion restriction, kPa	5
Heat rejected to ambient air:	
Engine, kW	95
Alternator, kW	77

‡ Air density = 1.20 kg/m^3

Alternator Specifications	
Type	4-Pole, Rotating-Field
Exciter type	Brushless, PMG
Voltage regulator	Yes
Insulation system:	Class H, Synthetic, Non-hygroscopic
Ingress Protection rating	IP23
Bearing: quantity, type	1, Sealed
Number of wire	12
Coupling type	Direct
Overspeed (rpm)	2250
Voltage regulation, no-load to full-load	±0.5%
Unbalanced load capability	8%

Alternator Standard Features

- The AVR voltage regulator 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 Alternator Data Sheets for alternator application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves.

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Controllers

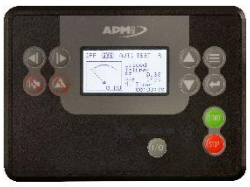
APM802 Controller

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 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

Refer to G6-152 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.



APM403 Controller

Provides a versatile control unit for single or parallel application.

- graphic display provides easy local data view.
- User language selectable
- Event log and management of the last 300 events; data and system settings can be saved to a flash drive.
- On-board communication and control ports on board (USB, USB host, CAN, RS485)
- The controller supports Modbus® RTU protocols (TCP protocol as option)

M80-D

Provides a basic terminal block for connecting a remote-control unit.
Intuitive LCD screen for basic generator parameters (coolant and fuel temperatures, engine speed,…)
Controls and records the main engine functions for quick diagnosis (starting, speed adjustment)

Codes and Standards

- Engine-generator set is designed and manufactured in facilities certified to ISO 9001 and ISO14001.
- Generator set meets NEMA MG1, BS5000, ISO, DIN EN, and IEC standards,.
- 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.
- Machinery Directive 2006/42/EC of May 17th 2006
- EMC Directive2014/30/UE
- Safety objectives set out in the Low Voltage Directive 2014/35/UE
- EN ISO 8528-13, EN 60034-1, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 55011, EN 1679-1 et EN 60204-1

Warranty Information

- A standard three-year from the commissioning date, 1000 running hours warranty for standby applications in Europe, Middle East and Africa.
- A standard two-year from the commissioning date or 8700-hour limited warranty for prime power applications.
- Five-year basic, five-year comprehensive, and ten-year extended limited warranties are also available

Available Warranties for Standby Applications

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

Standard Features

- Industrial water cooled internal combustion Engine
- Single electric starter
- Charging alternator 24Vdc
- Single bearing alternator IP23, T°rise / Insulation class H/H
- Welded steel skid
- M80-D controller
- Closed Crankcase Ventilation (CCV) Filters
- Standard air filter
- Local Emergency Stop Switch
- Oil Drain and Coolant Drain Extension
- Fuel/Water Separator
- Generator Heater
- Compensators and flanges for exhaust outlets
- Spring Isolation Under the Skid
- Packaging under plastic film
- Operation and Installation Literature
- Delivered with initial oil fill

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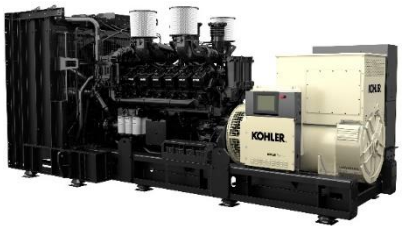
Dimensions and Weights

Compact version without cooling	
Overall Size, max., L x W x H, mm:	4573 x 2242 x 2721
Weight, max. wet, kg :	15284
Fuel tank capacity, L	0

Compact version with unit mounted radiator	
Unit-mounted radiator for easy installation, high functional reliability, and operation in harsh conditions	
Overall Size, max., L x W x H, mm:	6214 x 2798 x 2888
Weight, radiator model, max. wet, kg :	-
Fuel tank capacity, L	0



CPU40 soundproofed version	
An integrated solution in a 40-foot high-cube container suitable for harsh environments, for a silent, ready-to-use and easy-to-maintain installation.	
Overall Size, max., L x W x H, mm:	12192 x 2438 x 5167
Weight, max. wet, kg :	-
Fuel tank capacity, L	500
Sound Power level LwA in dB(A) 50Hz, 75% PRP	109
Sound Pressure level LpA @1m in dB(A) 50Hz, 75% PRP	86
Sound Pressure level LpA @7m in dB(A) 50Hz, 75% PRP	78

CPU40 super soundproofed version	
An integrated solution in a 40-foot high-cube container suitable for harsh environments, for an even more silent, ready-to-use and easy-to-maintain installation.	
Overall Size, max., L x W x H, mm:	12192 x 2438 x 5167
Weight, max. wet, kg :	-
Fuel tank capacity, L	500
Sound Power level LwA in dB(A) 50Hz, 75% PRP	103
Sound Pressure level LpA @1m in dB(A) 50Hz, 75% PRP	80
Sound Pressure level LpA @7m in dB(A) 50Hz, 75% PRP	72

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