

## Industrial Diesel Generator Set – **KD1000-F**50 Hz – Fuel Consumption Optimized



RATINGS 400V - 50 Hz			
Standby	kVA	1000	
	KWe	800	
Prime	kVA	909	
	KWe	727	

#### **Benefits & features**

#### **KOHLER** premium quality

- KOHLER provides one source responsibility for the generating set and accessories
- The generator set, its components and a wide range of options have been fully developed, prototype tested, factory built, and production-tested
- The generator sets are designed in accordance to ISO8528-5 performance class G3 and accepts rated load in one step

#### KOHLER premium performances Engines

- Low fuel consumption thanks to a high technology common rail injection engine
- A smaller footprint thanks to a high power density
- Low temperature starting capability
- Long maintenance interval

#### Alternator

- Provide industry leading motor starting capability
- Excitation system to permit sustained overcurrent > 300% In, during 10 sec
- Built with a class H insulation and IP23

#### Cooling

- A compact and complete solution using a mechanically driven radiator fan
- High temperature and altitude product capacity available

#### **Control Panel**

The KOHLER wide controller range provide the reliability and performances you expect from your equipment. You can program, manage and diagnose it easily and in an efficient way

#### **KOHLER** worldwide support

- A standard three-year or 1000-hour limited warranty for standby applications.
- A standard two-year or 8700-hour limited warranty for prime power applications.
- A worldwide product support

GENERAL SPECIFICATIONS			
Engine brand	KOHLER KD Series		
Alternator commercial brand KOHLER			
Voltage (V)	400/230		
Performance class	G3		
Standard Control Panel	APM403		
Genset Fuel consumption	PRP	ESP	
Consumption @ 100% PRP load (L/h)	187.6	202.4	
Engine optimisation	F		
Type of Cooling Radiator			

#### **GENERATOR SETS RATINGS**

				Star	idby Ra	iting	Prime	Rating
	Voltage	PH	Hz	kWe	kVA	Amps	kWe	kVA
KD1000-F	415/240	3	50	800	1000	1391	727	909
KD1000-F	400/230	3	50	800	1000	1443	727	909
	380/220	3	50	800	1000	1519	727	909

Data Center Continuous (DCP) Power rating is the same as the prime rating when a reliable grid is available

RATINGS: All three-phase units are rated at 0.8 power factor.





### Industrial Diesel Generator Set - KD1000-F 50 Hz – Fuel Consumption Optimized

WOLLED DIEGEL ENGINE				
KOHLER DIESEL ENGINE				
General				
Engine brand KOHLER KD S				
Engine ref.	KD27V2	L2-5CFS		
Distribution	4	Т		
Air inlet system	Tui	·bo		
Fuel	G	0		
Engine optimisation	ſ	=		
Cylinders configuration	\	/		
Number of cylinders	1	2		
Displacement (L)	26	.97		
Bore (mm) * Stroke (mm)	135 '	<sup>*</sup> 157		
Compression ratio	15	: 1		
Speed (RPM)	15	00		
Maximum stand-by power at rated RPM (kW)	90	)5		
Cylinder Head Material	Cast Iron			
Crankshaft Material Stee				
Intake and Exhaust Valve Material	Steel			
Piston type & material	Steel			
Charge Air coolant	coolant Air/Air DC			
Frequency regulation, steady state (%) +/- 0.25				
Injection Type Direct				
Governor type	overnor type Electronic			
ECU type	KODEC			
Air cleaner type, models	air cleaner type, models Dry			
Fuel system				
Maximum fuel pump flow (L/h) 310				
Fuel Inlet Minimum recommended size (mm) 19.05				
Max. restriction at fuel pump (m)	3.5			
Max head on fuel return line (m)	3.1			
Maximum allowed inlet fuel temperature (°C)	1			
Consumption with fan (L/h) PRP				
Consumption @ 100% PRP load (L/h) 187.6				
Consumption @ 75% PRP load (L/h) 137.4 1				
Consumption @ 50% PRP load (L/h)	94.2	102.8		
Consumption @ 25% load PRP (L/h)	51.7	55.8		

Cil system capacity including filters (L) Min. oil pressure (bar)	10	)1	
	10	11	
Min. oil pressure (bar)			
	3.3 5.5		
Max. oil pressure (bar)			
Oil sump capacity (L)	8	9	
Oil cooler	Plate Ex	changer	
Oil consumption 100% ESP 50Hz (L/h)	0.1	11	
Air Intake system			
Max. intake restriction (mm H2O)	51	.0	
Intake air flow (L/s)	923	.82	
Exhaust system			
Heat rejection to exhaust (kW)	64	18	
	PRP	ESP	
Exhaust gas temperature (°C)	474	558	
Exhaust gas flow (L/s)	2428	2727	
Max. exhaust back pressure (mm H2O)	867		
Radiator Charge Air Cooling System			
Ambiant temperature design (°C)	4	0	
Radiated heat to ambiant (kW)	62		
CAC Heat Rejection (kW)	203		
Heat rejection to coolant HT (kW) 304			
Radiator & Engine capacity (L) 116			
Coolant capacity HT, engine only (L) 55			
Flow on the HT circuit at 0.7Bars pressure drop off engine (L/min)			
Maximum Coolant temp without derating (°C) 100			
Outlet coolant temperature (°C)	temperature (°C) 100		
Type of coolant Gencool			
Compressor Discharge Temp at 25°C (°C) 209			
Thermostat begin of opening HT (°C) 82			
nermostat end of opening HT (°C) 92			
Fan power (kW)	kW) 20.8		
For air flow w/a restriction (m2/s)	15	.5	
Fan air flow w/o restriction (m3/s)			

RATINGS: All three-phase units are rated at 0.8 power factor.

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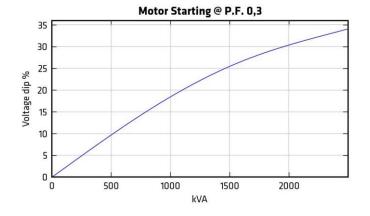
83 - 89 Westgate Drive, Altona North, VIC 3025



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Alternator Specifications	
Alternator commercial brand	KOHLER
Alternator ref.	KH03450T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	Н
Number of wires	12
Capacity for maintaining short circuit at 3 In for 10 s	Yes
AVR Regulation	Yes
Coupling	Direct
Application data	
Overspeed (rpm)	2250
Power factor (Cos Phi)	0.8
Voltage regulation at established rating (+/- %)	0.50
Wave form : NEMA=TIF	<40
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	2,7
Total Harmonic Distortion, on linear load DHT (%)	2,0
Recovery time (Delta U = 20% transcient) (ms)	200
Performance datas	
Continuous Nominal Rating 40°C (kVA)	930
Unbalanced load acceptance ratio (%)	100

Peak motor starting (kVA) based on x% voltage dip power factor at 0.3  $\,$ 



#### **Alternator Standard Features**

- All models are brushless, rotating-field alternators
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds
- Superior voltage waveform

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



### Industrial Diesel Generator Set – **KD1000-F** 50 Hz – Fuel Consumption Optimized

#### **Dimensions compact version**

Length (mm) * Width (mm) * Height (mm)	4190* 1747 * 2275
Dry weight (kg)	6040
Tank capacity (L)	0

#### **Dimensions soundproofed version**

M427SI	
Length (mm) * Width (mm) * Height (mm)	6413* 2160 * 2750
Dry weight (kg)	8800
Tank capacity (L)	1035
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	86
Measured acoustic power level (Lwa) 50Hz (75% PRP)	107.5
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	77

#### **Dimensions super soundproofed version**

M427SSI	
Length (mm) * Width (mm) * Height (mm)	6413* 2160 * 2750
Dry weight (kg)	8900
Tank capacity (L)	1035
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	82
Measured acoustic power level (Lwa) 50Hz (75% PRP)	103.2
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	73

#### **Contener dimensions ISO20 version**

ISO20 Si	
Length (mm) * Width (mm) * Height (mm)	6058* 2438 * 2896
Dry weight (kg)	11650
Tank capacity (L)	500
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	86
Measured acoustic power level (Lwa) 50Hz (75% PRP)	107
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	77

#### Contener dimensions ISO20 super soundproofed version

9140* 2438 * 2896
12240
500
77
99
68

RATINGS: All three-phase units are rated at 0.8 power factor.



East Coast Generators Pty Ltd

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## Industrial Diesel Generator Set - KD1000-F

#### 50 Hz - Fuel Consumption Optimized

#### M80-D



The M80-D can be used as a basic terminal block for connecting an electrical cabinet box and as an instrument panel with a highly intuitive LCD screen giving an overview of your generating set's basic parameters:

- Oil gauge
- coolant temperature
- oil temperature
- engine speed
- battery voltage
- charge air temperature
- fuel consumption
- etc

The engine main functions can be controlled and events are recorded to facilitate diagnostics:

- starting
- speed adjustment
- stopping
- droop
- etc.

#### ERGONOMIC AND USER FRIENDLY

Large display screen,

buttons and scroll wheel.

Electrical measurements: voltmeter, frequency meter, ampmeter, voltage. Engine parameters: working hours counter, oil pressure, coolant temperature, fuel level, engine speed, battery

Alarms and faults: oil pressure, coolant temperature, failure to start, overspeed, alternator min/max., battery voltage min. /max., emergency stop, fuel level.

 $\label{lem:encoder} \mbox{Ergonomics: wheel for navigating around the various menus.}$ 

Communication: remote control and operation software,

USB connections, PC connection.

For more information on the product and its options, please refer to the sales documentation.

#### **APM403**

**DEC4000** 



#### BASIC GENERATING SET AND POWER PLANT CONTROL

The APM403 is a versatile control unit which allows operation in manual or automatic mode

- Measurements : voltage and current
- kW/kWh/kVA power meters
- Standard specifications: Voltmeter, Frequency meter.
- Optional : Battery ammeter.
- J1939 CAN ECU engine control
- Alarms and faults: Oil pressure, Coolant temperature, Overspeed, Startup failure, alternator min/max, Emergency stop button.
- Engine parameters: Fuel level, hour counter, battery voltage.
- Optional (standard at 24V): Oil pressure, water temperature.
- Event log/ Management of the last 300 genset events.
- Mains and genset protection
- Clock management
- USB connections, USB Host and PC,
- Communications : RS485 INTERFACE
- ModBUS protocol /SNMP
- Optional: Ethernet, GPRS, remote control, 3G, 4G,
- Websupervisor, SMS, E-mails

RATINGS: All three-phase units are rated at 0.8 power factor.



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**APM802** 

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ADVANCED POWER PLANT MANAGEMENT CONTROL

Dedicated to power plant management APM802 provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility

- Graphic display with touchscreen
- User language selectable
- Specially researched ergonomics
- High level of equipment availability
- USB and Ethernet ports
- Modbus protocol
- Making it easy to extend the installation
- Complies with the international standard IEC 61131-3







### Industrial Diesel Generator Set - KD 1000-F 50 Hz - Fuel Consumption Optimized

#### STANDARD SCOPE OF SUPPLY

All our KD Series gensets are fitted with:

- Industrial water cooled DIESEL engine
- Radiator with coolant
- Electric starter & charge alternator 24 V D.C
- Electronic governor
- Standard air filter
- Single bearing alternator IP 23 T° rise/insulation to class H/H
- Welded steel base frame with 80% vibration attenuation mounts
- Flexible fuel lines & lub oil drain pump
- Fuel water separator filter
- Exhaust outlet with flexible and flanges
- M80 control panel
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil
- Delivered with antifreeze liquid

#### **CODES AND STANDARDS**

Engine-generators set is designed and manufactured in facilities certified to standards ISO9001:2015 & ISO14001:2015. The generator sets and its components are prototype-tested, factory built and production tested and are in compliance with the relevant standards:

- Machinery Directive 2006/42/EC of May 17th 2006
- EMC Directive 2014/30/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

#### **TERMS OF USE**

According to the standard, the nominal power assigned by the genset is given for 25°C Air Intlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

#### WARRANTY INFORMATIONS

Standard Warranty Period:

- for Products in "back-up" service
  - 30 months from the date the Product leaves the plant, extended to 42 months for KD series
  - 24 months from the Product's commissioning date, extended to 36 months for KD series
  - 1,000 running hours

The warranty expires when one of the above conditions is met.

- for Products in "continuous" service (continuous supply of electricity, either in the absence of any normal electricity grid or to complement the grid),
  - o 18 months from the date the Product leaves the plant, extended to 30 months for KD series
  - 12 months from the Product's commissioning date, extended to 24 months for KD series
  - 2,500 running hours, extended to 8700 running hours for KD series

The warranty expires when one of the above conditions is met.

For more details regarding conditions of application and scope of the warranty please refer to our General "terms & conditions of sales".

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. Average load factor is <85%. 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. Average load factor is<75%. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. For limited running time, continuous or other ratings, consult your contact and obtain technical information 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

RATINGS: All three-phase units are rated at 0.8 power factor.

