

# KOHLER<sup>®</sup> Power Systems



## DESCRIPTIVE

- 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
- A one-year limited warranty covers all systems and components
- Electronic governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- 9 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 24 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

## POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed

## TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet 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.

## ASSOCIATED UNCERTAINTY

For the generator sets used indoor, where the acoustic pressure levels depend on the installation conditions, it is not possible to specify the ambient noise level in the operating and maintenance instructions. You will also find in our operating and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriate preventive measures.

# KH330

Engine type	P126TI-II
Alternator type	AT01720T
Performance class	G3

## GENERAL CHARACTERISTICS

Frequency (Hz)	50
Voltage (V)	400/230
Standard control panel	APM303
Optional control panel	DEC4000
Optional control panel	APM802
Optional control panel	Basic terminal block

## POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
415/240	264	330	240	300	459
400/230	264	330	240	300	476
380/220	264	330	240	300	501

## DIMENSIONS COMPACT VERSION

Length (mm)	3160
Width (mm)	1340
Height (mm)	1592
Dry weight (kg)	2440
Tank capacity (L)	470

## DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	M228
Length (mm)	4475
Width (mm)	1410
Height (mm)	2430
Dry weight (kg)	3540
Tank capacity (L)	470
Acoustic pressure level @1m in dB(A)	81
Sound power level guaranteed (Lwa)	101
Acoustic pressure level @7m in dB(A)	71

**GENERAL ENGINE DATA**

Engine model	DOOSAN
Engine type	P126TI-II
Air inlet	Turbo
Cylinders arrangement	L
Number of cylinders	6
Displacement (L)	11.05
Charge Air coolant	Air/Air DC
Bore (mm) x Stroke (mm)	123 x 155
Compression ratio	17 : 1
Speed (RPM)	1500
Pistons speed (m/s)	7.75
Maximum stand-by power at rated RPM (kW)	294
Frequency regulation, steady state (%) +/- 0.5%	
BMEP (bar)	19.11
Governor type	Electronic

**COOLING SYSTEM**

Radiator & Engine capacity (L)	50.5
Max water temperature (°C)	103
Outlet water temperature (°C)	N/A
Fan power (kW)	10
Fan air flow w/o restriction (m3/s)	5
Available restriction on air flow (mm H2O)	76
Type of coolant	Glycol-Ethylene
Thermostat modulating state HT (°C)	71 - 85

**EMISSIONS**

Emission PM (g/kWh)	0.14
Emission CO (g/kWh)	0.11
Emission HC+NOx (g/kWh)	N/A
Emission HC (mg/Nm3) 5% O2	N/A

**EXHAUST**

Exhaust gas temperature @ ESP 50Hz (°C)	590
Exhaust gas flow @ ESP 50Hz(L/s)	790
Max. exhaust back pressure (mm H2O)	600

**FUEL**

Consumption @ 110% load (L/h)	77.6
Consumption @ 100% load (L/h)	63.1
Consumption @ 75% load (L/h)	47
Consumption @ 50% load (L/h)	31.3
Maximum fuel pump flow (L/h)	270

**OIL**

Oil capacity (L)	25
Min. oil pressure (bar)	0.5
Max. oil pressure (bar)	10
Oil consumption 100% load (L/h)	0.063
Oil sump capacity (L)	23

**HEAT BALANCE**

Heat rejection to exhaust (kW)	254
Radiated heat to ambient (kW)	35.2
Heat rejection to coolant (kW)	105.6

**AIR INTAKE**

Max. intake restriction (mm H2O)	635
Intake air flow (L/s)	335

#### GENERAL DATA

Alternator type	AT01720T
Number of Phase	Three phase
Power factor (Cos Phi)	0.8
Altitude (m)	0 to 1000
Overspeed (rpm)	2250
Number of pole	4
Capacity for maintaining short circuit at 3 In for 10 s	Yes
Insulation class	H
T° class (H/125°), continuous 40°C	H / 125°K
T° class, standby 27°C	H / 163°K
AVR Regulation	Yes
Total Harmonic Distortion in no-load DHT (%)	2.6
Total Harmonic Distortion, on load DHT (%)	3
Wave form : NEMA=TIF	<40
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	1
Recovery time (Delta U = 20% transient) (ms)	200
Protection class	IP 23
Technology	Without collar or brush

#### OTHER DATA

Continuous Nominal Rating 40°C (kVA)	300
Standby Rating 27°C (kVA)	330
Efficiencies 100% of load (%)	93.7
Air flow (m3/s)	0.533
Short circuit ratio (Kcc)	0.43
Direct axis synchro reactance unsaturated (Xd) (%)	215.3
Quadrature-axis synchro reactance unsaturated (Xq) (%)	124.2
Open circuit time constant (T'do) (ms)	1400
Direct axis transient reactance saturated (X'd) (%)	13.1
Short circuit transient time constant (T'd) (ms)	91
Direct axis subtransient reactance saturated (X''d) (%)	7
Subtransient time constant (T''d) (ms)	12
Quadrature-axis subtransient reactance saturated (X''q) (%)	17.9
Subtransient time constant (T''q) (ms)	20
Zero sequence reactance unsaturated (Xo) (%)	2.38
Negative sequence reactance saturated (X2) (%)	13.8
Armature time constant (Ta) (ms)	16
No load excitation current (io) (A)	0.78
Full load excitation current (ic) (A)	3.9
Full load excitation voltage (uc) (V)	61.3
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	230
Transient dip (4/4 load) - PF : 0.8 AR (%)	14
No load losses (W)	3970
Heat rejection (W)	16137
Unbalanced load acceptance ratio (%)	100

### DIMENSIONS

#### CONTAINMENT DW

Commercial reference of the enclosure	M228 DW
Length (mm)	4527
Width (mm)	1410
Height (mm)	2700
Dry weight (kg)	4060
Tank capacity (L)	1368
Acoustic pressure level @1m in dB(A)	81
Sound power level guaranteed (Lwa)	101
Acoustic pressure level @7m in dB(A)	71

### APM303, comprehensive and simple



The APM303 is a versatile unit which can be operated in manual or automatic mode. It offers the following features:

**Measurements:**

phase-to-neutral and phase-to-phase voltages, fuel level  
(In option : active power currents, effective power, power factors, Kw/h energy meter, oil pressure and coolant temperature levels)

**Supervision:**

Modbus RTU communication on RS485

**Reports:**

(In option : 2 configurable reports)

**Safety features:**

Overspeed, oil pressure, coolant temperatures, minimum and maximum voltage, minimum and maximum frequency (Maximum active power  $P < 66kVA$ )

**Traceability:**

Stack of 12 stored events

For further information, please refer to the data sheet for the APM303.

### DEC4000, ergonomic and user-friendly



The highly versatile DEC4000 control unit is complex yet accessible, thanks to the particular attention paid to optimising its ergonomics and ease of use. With its large display screen, buttons and scroll wheel, it places the accent on simplicity and communication.

The DEC4000 offers the following functions:

**Electrical measurements:** voltmeter, frequency meter, ammeter.

**Engine parameters:** working hours counter, oil pressure, coolant temperature, fuel level, engine speed, battery voltage.

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

**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.

**APM802 dedicated to power plant management**



The new APM802 command/control system is specifically designed for operating and monitoring power plants for markets including hospitals, data centres, banks, the oil and gas sector, industries, IPP, rental and mining.

The Human Machine Interface, designed in collaboration with a company specialising in interface design, facilitates operations with a large 100% touch screen. The pre-configured system for power plant applications features a brand new customisation function which complies with the international standard IEC 61131-3. New communication functions (PLC and regulation), improve the high level of equipment availability in the installation.

**Advantages:**

- Dedicated to power plant management.
- Specially researched ergonomics.
- High level of equipment availability.
- Modularity and long service life guaranteed.
- Making it easy to extend the installation

For more information, please refer to the sales documentation.

**Basic terminal block**



The control unit can be used as a basic terminal block for connecting a control box.

Offers the following functions:

emergency stop button, customer connection terminal block, CE.