

KOHLER[®] 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.

KV700C2

Engine type	TWD1643GE
Alternator type	LSA 49.3 S4
Performance class	G3

GENERAL CHARACTERISTICS

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

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
220 TRI	558	697	518	647	1829
415/240	560	700	520	650	974
400/230	560	700	520	650	1010
380/220	558	697	518	647	1059
240 TRI	560	700	520	650	1684
230 TRI	560	700	520	650	1757

DIMENSIONS COMPACT VERSION

Length (mm)	3470
Width (mm)	1630
Height (mm)	2050
Dry weight (kg)	4020
Tank capacity (L)	610

DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	M230
Length (mm)	5031
Width (mm)	1690
Height (mm)	2672
Dry weight (kg)	5550
Tank capacity (L)	610
Acoustic pressure level @1m in dB(A)	85
Sound power level guaranteed (Lwa)	105
Acoustic pressure level @7m in dB(A)	75

GENERAL ENGINE DATA

Engine model	VOLVO
Engine type	TWD1643GE
Air inlet	Turbo
Cylinders arrangement	L
Number of cylinders	6
Displacement (L)	16.12
Charge Air coolant	Air/Water DC
Bore (mm) x Stroke (mm)	144 x 165
Compression ratio	16.5 : 1
Speed (RPM)	1500
Pistons speed (m/s)	8.25
Maximum stand-by power at rated RPM (kW)	613
Frequency regulation, steady state (%) +/-	0.5%
BMEP (bar)	27.44
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (L)	95
Max water temperature (°C)	103
Outlet water temperature (°C)	93
Fan power (kW)	17
Fan air flow w/o restriction (m ³ /s)	10
Available restriction on air flow (mm H ₂ O)	30
Type of coolant	Glycol-Ethylene
Thermostat modulating range HT (°C)	86-96

EMISSIONS

Emission PM (g/kWh)	0.08
Emission CO (g/kWh)	0.69
Emission HC+NO _x (g/kWh)	N/A
Emission HC (mg/Nm ³) 5% O ₂	N/A

EXHAUST

Exhaust gas temperature @ ESP 50Hz (°C)	450
Exhaust gas flow @ ESP 50Hz (L/s)	1693
Max. exhaust back pressure (mm H ₂ O)	1000

FUEL

Consumption @ 110% load (L/h)	142.6
Consumption @ 100% load (L/h)	128
Consumption @ 75% load (L/h)	94.5
Consumption @ 50% load (L/h)	63
Maximum fuel pump flow (L/h)	190

OIL

Oil capacity (L)	48
Min. oil pressure (bar)	0.7
Max. oil pressure (bar)	6.5
Oil consumption 100% load (L/h)	0.1
Oil sump capacity (L)	42

HEAT BALANCE

Heat rejection to exhaust (kW)	463
Radiated heat to ambient (kW)	20
Heat rejection to coolant (kW)	218

AIR INTAKE

Max. intake restriction (mm H ₂ O)	150
Intake air flow (L/s)	727

GENERAL DATA

Alternator type	LSA 49.3 S4
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 (%)	<4
Total Harmonic Distortion, on load DHT (%)	<4
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	0.5
Recovery time (Delta U = 20% transient) (ms)	500
Protection class	IP 23
Technology	Without collar or brush

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	660
Standby Rating 27°C (kVA)	745
Efficiencies 100% of load (%)	94.1
Air flow (m3/s)	1
Short circuit ratio (Kcc)	0.363
Direct axis synchro reactance unsaturated (Xd) (%)	350
Quadrature-axis synchro reactance unsaturated (Xq) (%)	N/A
Open circuit time constant (T'do) (ms)	2002
Direct axis transient reactance saturated (X'd) (%)	17.5
Short circuit transient time constant (T'd) (ms)	100
Direct axis subtransient reactance saturated (X''d) (%)	14
Subtransient time constant (T''d) (ms)	10
Quadrature-axis subtransient reactance saturated (X''q) (%)	16.3
Subtransient time constant (T''q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	0.2
Negative sequence reactance saturated (X2) (%)	15.17
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	1.06
Full load excitation current (ic) (A)	4.21
Full load excitation voltage (uc) (V)	56.8
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	1344.25
Transient dip (4/4 load) - PF : 0,8 AR (%)	12
No load losses (W)	8232.97
Heat rejection (W)	32583.13
Unbalanced load acceptance ratio (%)	60

DIMENSIONS

CONTAINMENT DW

Commercial reference of the enclosure	M230 DW
Length (mm)	5083
Width (mm)	1690
Height (mm)	2932
Dry weight (kg)	6140
Tank capacity (L)	1950
Acoustic pressure level @1m in dB(A)	85
Sound power level guaranteed (Lwa)	105
Acoustic pressure level @7m in dB(A)	75

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.