



RATINGS 400 V - 50 Hz		
Standby	kVA	1403
	kWe	1122
Data Center / Mission Critical	kVA	1403
	kWe	1122
Prime	kVA	1275
	kWe	1020



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
- Approved for use with HVO (Hydrotreated Vegetable Oil) according to EN15940

KOHLER premium performances

Engines

- High reliability enhanced through a simple design for optimal functional performances
- High performances turbochargers providing high engine performances under all loads
- Easy operation and maintenance: accessories requiring daily maintenance are conveniently located on the same side of the engine

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 mechanical or an electrical radiator fan (depending of genset type)
- High temperature and altitude product capacity available

Control Panel

- The KOHLER wide controller range provides 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 two-year or 1000-hours limited warranty for standby applications.
- A standard one-year or 2500 hours limited warranty for prime power applications.
- A worldwide product support

GENERAL SPECIFICATIONS

Engine brand	mitsubishi
Alternator commercial brand	KOHLER
Voltage (V)	400/230
Standard Control Panel	Terminal block
Optional control panel	M80
Optional Control Panel	APM403
Optional control panel	APM802
Consumption @ 100% load ESP (L/h) *	281
Consumption @ 100% load PRP (L/h) *	254
Emission level	Fuel consumption optimization
Type of Cooling	Mechanical driven fan
Performance class	G3

GENERATOR SETS RATINGS

	Standby			Data Center / Mission Critical		Prime	
Voltage	kWe	kVA	Amps	kWe	kVA	kWe	kVA
415/240	1104	1380	1920	1104	1380	1004	1255
400/230	1122	1403	2025	1122	1403	1020	1275
380/220	1122	1403	2132	1122	1403	1020	1275

DIMENSIONS COMPACT VERSION

Length (mm)	4317
Width (mm)	2000
Height (mm)	2365
Tank capacity (L)	0
Dry weight (kg)	10370

DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	NOT AVAILABLE
Length (mm)	6800
Width (mm)	2160
Height (mm)	3928
Tank capacity (L)	1035
Dry weight (kg)	12700
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	89
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	80

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

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; Fuel density at 0.85 kg/L.

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subjected to instrumentation and engine-to-engine variability. Test conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results. Data and specifications subject to change without notice.

Engine			
General		Lubrication System	
Engine brand	MITSUBISHI	Oil system capacity including filters (l)	180
Engine ref.	S12R-PTA *	Min. oil pressure (bar)	2
Air inlet system	Turbo	Max. oil pressure (bar)	6,40
Fuel	Diesel Fuel/HVO	Oil sump capacity (l)	150
Emission level	Fuel consumption optimization	Oil consumption 100% ESP 50Hz (l/h)	1,15
Cylinder configuration	V	Air Intake system	
Number of cylinders	12	Max. intake restriction (mm H2O)	400
Displacement (l)	49,03	Combustion air flow (l/s)	1633
Bore (mm) * Stroke (mm)	170 * 180	Exhaust system	
Compression ratio	14 : 1		PRPESP
Speed 50Hz (RPM)	1500	Exhaust gas temperature (°C)	492
Maximum stand-by power at rated RPM (kW)	1220	Exhaust gas flow (L/s)	39174300
Charge Air coolant	Air/Water	Heat rejection to exhaust (kW)	833
Frequency regulation, steady state (%)	+/- 0.25%	Max. exhaust back pressure (mm H2O)	600
Injection Type	Direct	Cooling system	
Governor type	Electronic	Radiator & Engine capacity (l)	300
Air cleaner type, models	Dry	Fan power 50Hz (kW)	30
Fuel system		Fan air flow w/o restriction (m3/s)	25,90
Maximum fuel pump flow (l/h)	588	Available restriction on air flow (mm H2O)	20
Max head on fuel return line (m fuel)	2	Type of coolant	Glycol-Ethylene
Consumption with cooling system		Radiated heat to ambient (kW)	86
Specific consumption @ ESP Max Power (g/kW.h)	199	Heat rejection to coolant HT (kW)	713
Specific consumption @ PRP Max Power (g/kW.h)	198	HT circuit flow rate (l/min)	1650
Specific consumption @ 75% of PRP Power (g/kW.h)	201	Coolant capacity HT, engine only (l)	125
Specific consumption @ 50% of PRP Power (g/kW.h)	213	Outlet coolant temperature (°C)	95
Emissions		Max coolant temperature, Shutdown (°C)	98
Emission PM (g/kW.h)	0,35	Max. pressure at inlet of HT water pump (mbar)	981
Emission CO (g/kW.h)	1,80	Thermostat begin of opening HT (°C)	71
Emission NOx (g/kW.h)	7,70	Thermostat end of opening HT (°C)	85
Emission HC (g/kW.h)	0,31		

* Engine reference may be partially modified depending on genset application, options selected by the customer and lead time required.

Alternator Specifications

Alternator commercial brand	KOHLER
Kohler Alternator description	KH04830T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	H
Number of wires	12
AVR Regulation	Yes
Coupling	Direct
Capacity for maintaining short circuit at 3 In for 10 s	Yes

Application data

Overspeed (rpm)	2250
Power factor (Cos Phi)	0,80
Voltage regulation at established rating (+/- %)	0,50
Wave form : NEMA=TIF	<40
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	2,4
Total Harmonic Distortion, on linear load DHT (%)	1,5
Recovery time (Delta U = 20% transient) (ms)	200

Performance datas

Continuous Nominal Rating 40°C (kVA)	1300
Unbalanced load acceptance ratio (%)	8

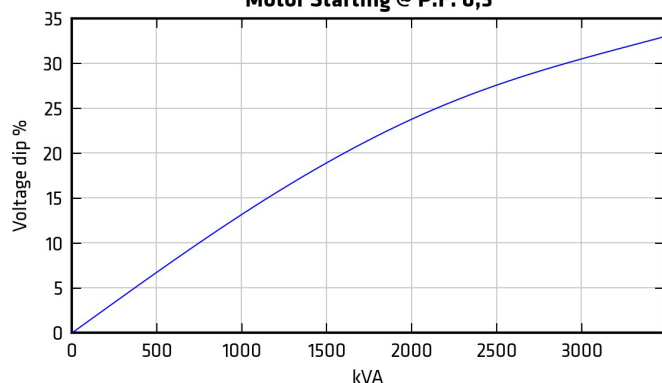
Peak motor starting (kVA) based on x% voltage dip power factor at 0.3

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.

Motor Starting @ P.F. 0,3



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Dimensions compact version with baseframe fuel tank

Length (mm) * Width (mm) * Height (mm)	4317 * 2000 * 2365
Dry weight (kg)	10500
Tank capacity (L)	500



Dimensions compact version

Length (mm) * Width (mm) * Height (mm)	4317 * 2000 * 2365
Dry weight (kg)	10370
Tank capacity (L)	0



M428 - Dimensions soundproofed version

Length (mm) * Width (mm) * Height (mm)	6800 * 2160 * 3928
Dry weight (kg)	12700
Tank capacity (L)	1035
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	89
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	111
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	80



M428 SSi - Dimensions super soundproofed version

Length (mm) * Width (mm) * Height (mm)	6800 * 2160 * 3928
Dry weight (kg)	12850
Tank capacity (L)	1035
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	86
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	108
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	77

* dimensions and weight without options



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; Fuel density at 0.85 kg/L.

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Basic terminal block



It is used as a basic terminal block for connecting a control unit. Offers the following functions:

- emergency stop button
- customer connection terminal block
- CE certified

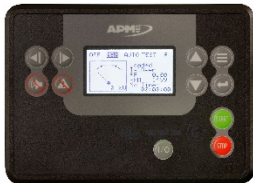
M80



The M80 is a dual-function control panel. It can be used as a basic terminal block for connecting a control unit and as an instrument panel with a direct read facility, with displays giving a global view of your generating set's basic parameters. Offers the following functions:

- Engine parameters: tachometer, working hours counter, coolant temperature indicator, oil pressure indicator
- emergency stop button
- customer connection terminal block
- CE certified

APM403



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, Start-up 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

APM802



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

STANDARD DELIVERY

All our gensets are fitted with:

- Industrial water-cooled DIESEL engine
- Electric starter & charge alternator
- Standard air filter
- Electric circuit breaker, adapted to the short-circuit current of the generating set
- Single bearing alternator IP 23 T° rise/ insulation to class H/H
- Welded steel base frame with 85% vibration attenuation mounts
- frame height optimized to allow it to be moved safely by forklift
- enclosure made of new high-quality European steel with enhanced corrosion resistance
- enclosures and base frames tested and analyzed by the French Corrosion Institut
- 100% of tanks tested for permeability
- Personal protection ensured by protective grilles on hot and rotating parts
- Separate 9 dB(A) silencer
- Fuel tank welded inside the genset frame
- Retention bund included for gensets up to 250 kVA ESP
- Charged DC starting battery with electrolyte
- Emergency stop button on the outside
- Flexible fuel lines & lub oil drain cock
- Exhaust outlet with flexible and flanges
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil and antifreeze liquid

STANDARD SCOPE OF SUPPLY

All our 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 vibration attenuation mounts
- Flexible fuel lines & lub oil drain pump
- 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

POWER RATINGS DEFINITION according to ISO8528-1 (2018-02 edition) and ISO-3046-1

Emergency Standby Power (ESP): 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 per 24 hours of operation is <80%.

Prime Power (PRP): At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour within 12 hour of operation. Average load factor per 24 hours of operation is <80%.

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Industrial Diesel Generator Set – T1400

50 Hz

Data Center Mission Critical (DCP): Data Center Mission Critical power is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

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; Fuel density at 0.85 kg/L.

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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.

WARRANTY INFORMATIONS

Standard Warranty Period:

- for Products in "back-up" service
 - o 30 months from the date the Product leaves the plant
 - o 24 months from the Product's commissioning date
 - o 1,000 running hours

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

- for Products in "prime" or "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
 - o 12 months from the Product's commissioning date
 - o 2,500 running hours

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".