



### Benefits & features

#### KOHLER SDMO premium quality

- Design offices using the latest technical innovations
- Modern fully certified factories
- A cutting edge laboratory
- The generating set, its components and a wide range of options have been fully developed, prototype tested, factory built, and production tested

#### KOHLER SDMO premium performances

- Optimized and certified sound levels
- Reliable power, even in extreme conditions
- Optimized fuel consumption
- Compact footprint
- Best quality of electricity, high starting and loading capacity, according to ISO8528-5
- Robust base frames and high-quality enclosures
- Protection of installations and people
- Approved in line with the most stringent standards

#### Engines

- Premium level engines, in-house or from strong partners
- High power density, small footprint
- Low temperature starting capability
- Long maintenance interval

#### Alternator

- Provide industry leading motor starting capability
- Made in Europe
- Built with a class H insulation and IP23

#### Cooling

- A flexible solution using an electrical driven radiator fan
- Designed or optimized by KOHLER-SDMO
- High temperature and altitude product capacity available

#### Base frame and enclosure

- High quality steel with enhanced corrosion resistance
- Highly durable QUALICOAT-certified epoxy paint
- Minimum 1000 hours of resistance to salt spray in accordance with ISO12944
- Ergonomic access to allow easy maintenance and connection of the generator
- Robust design optimized for transportation

RATINGS 400 V - 50 Hz		
Standby	kVA	12
	kWe	9,60
Prime	kVA	10,90
	kWe	8,70

### GENERAL SPECIFICATIONS

Engine brand	KOHLER KDI
Alternator commercial brand	KOHLER
Voltage (V)	400/230
Standard Control Panel	APM303
Optional control panel	EasyGen 3200XT

Consumption @ 100% load ESP (L/h)	4
Consumption @ 100% load PRP (L/h)	3
Type of Cooling	Mechanical driven fan
Performance class	G2

### GENERATOR SETS RATINGS

				Standby Rating			Prime Rating	
K12	Voltage	PH	Hz	kWe	kVA	Amps	kWe	kVA
	415/240	3	50	9,60	12	17	8,70	10,90
	400/230	3	50	9,60	12	17	8,70	10,90
	380/220	3	50	9,60	12	18	8,70	10,90
	240 TRI	3	50	9,60	12	29	8,70	10,90
	230 TRI	3	50	9,60	12	30	8,70	10,90
	220 TRI	3	50	9,60	12	32	8,70	10,90
	220/127	3	50	8	10	26	7,30	9,10

### DIMENSIONS COMPACT VERSION

Length (mm)	1410
Width (mm)	720
Height (mm)	1020
Tank capacity (L)	50
Dry weight (kg)	340

### DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	M126
Length (mm)	1750
Width (mm)	775
Height (mm)	1230
Tank capacity (L)	50
Dry weight (kg)	510
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	67
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	54

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.

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	KOHLER KDI	Oil system capacity including filters (l)	3,30
Engine ref.	KDW1404 *	Min. oil pressure (bar)	1,40
Air inlet system	Atmo	Max. oil pressure (bar)	7
Cylinders configuration	L	Oil sump capacity (l)	3,10
Number of cylinders	4	Oil consumption 100% ESP 50Hz (l/h)	0,06
Displacement (l)	1,37	Air Intake system	
Bore (mm) * Stroke (mm)	75 * 77,60	Max. intake restriction (mm H2O)	200
Compression ratio	22,8 : 1	Intake air flow (l/s)	17,20
Speed (RPM)	1500	Exhaust system	
Maximum stand-by power at rated RPM (kW)	11,50		
Frequency regulation, steady state (%)	+/- 2.5%	PRP	ESP
Injection Type	Indirect	Heat rejection to exhaust (kW)	12
Governor type	Mechanical	Exhaust gas temperature (°C)	443
Air cleaner type, models	Dry	Exhaust gas flow (L/s)	41,90
Fuel system		Max. exhaust back pressure (mm H2O)	750
Maximum fuel pump flow (l/h)	50	Cooling system	
Consumption with cooling system		Radiator & Engine capacity (l)	5
Consumption @ 100% load ESP (l/h)	3,60	Fan power 50Hz (kW)	0,35
Consumption @ 100% PRP load (l/h)	3,30	Fan air flow w/o restriction (m3/s)	1
Consumption @ 75% PRP load (l/h)	2,50	Available restriction on air flow (mm H2O)	
Consumption @ 50% PRP load (l/h)	1,80	Type of coolant	Glycol-Ethylene
Emissions		Radiated heat to ambient (kW)	2
		Heat rejection to coolant HT (kW)	12
		Max coolant temperature, Shutdown (°C)	110
		Thermostat begin of opening HT (°C)	80
		Thermostat end of opening HT (°C)	

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

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**Alternator Specifications**

Alternator commercial brand	KOHLER
Alternator ref.	KH00350T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	H
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)	0,80
Voltage regulation at established rating (+/- %)	1
Wave form : NEMA=TIF	<45
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	2,6
Total Harmonic Distortion, on linear load DHT (%)	2,3
Recovery time (Delta U = 20% transient) (ms)	200

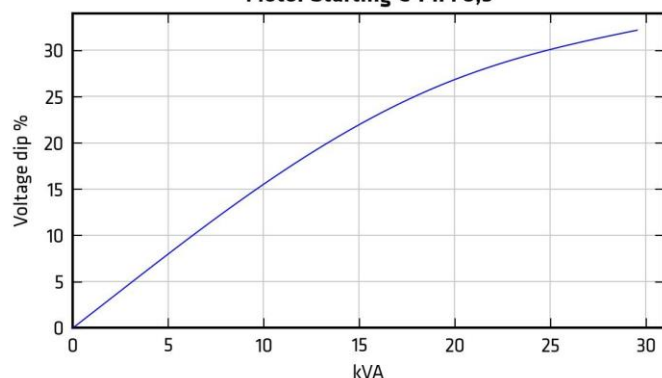
**Performance datas**

Continuous Nominal Rating 40°C (kVA)	11
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
- 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

Length (mm) * Width (mm) * Height (mm)	1410 * 720 * 1020
Dry weight (kg)	340
Tank capacity (L)	50



### Dimensions soundproofed version

#### M126

Length (mm) * Width (mm) * Height (mm)	1750 * 775 * 1230
Dry weight (kg)	510
Tank capacity (L)	50
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	67
Measured acoustic power level (Lwa) 50Hz (75% PRP)	82,58
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	54



### Dimensions DW compact version

Length (mm) * Width (mm) * Height (mm)	1797 * 775 * 1181
Dry weight (kg)	490
Tank capacity (L)	93



### Dimensions DW soundproofed version

#### M126 DW

Length (mm) * Width (mm) * Height (mm)	1797 * 775 * 1391
Dry weight (kg)	660
Tank capacity (L)	93
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	66
Measured acoustic power level (Lwa) 50Hz (75% PRP)	82,58
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	54



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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### APM303



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  $P < 66 \text{ kVA}$ )
- Traceability: Stack of 12 stored events

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

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## EasyGen 3200XT



The EasyGen-3200XT application range spans from isolated operation of a single genset to load sharing of up to 32 gen-sets in islanded and/or parallel operation with a single utility. It combines complete engine-generator control and protection with advanced, peer-to-peer paralleling functionality and innovative features in a robust, attractive, user-friendly and all-in-one package. Its integrated LogicsManager™ and AnalogManager™ pro-programmable logic functionalities provide outstanding application flexibility and can often eliminate the need of an additional PLC control, yet can easily integrate with SCADA or PLC-based control systems where desired.

- Three-phase true RMS power sensing with Class I accuracy
- Operation modes: AUTO, STOP, MANUAL, and TEST modes accessible through face plate or discrete input
- Breaker control: Slip frequency/phase matching synchronization, open/close control, breaker monitoring
- Load transfer: open/closed transition, interchange, soft loading/unloading, Utility parallel
- Load share and device to device communication over Ethernet or CAN ("warm redundancy" possible)
- Remote control via interface (Modbus TCP, Modbus RTU) and via discrete/analog inputs for adjusting speed, frequency, voltage, power, reactive power, and power factor set points
- Freely configurable PID controllers for various control purposes, such as heating circuit control (CHP applications), water level, fuel level, pressure and/or other process values
- Direct support to several ECUs: Scania S6, MTU ADEC ECU7/8, Volvo EMS2 & EDC4, Deutz EMR2 & EMR3, MAN MFR/EDC7, SISU EEM, Cummins and Woodward EGS02 ECU
- Field ECU support and additional I/O expansion board connectivity through sequencer files
- "System Update" function for online troubleshooting and adding / removing generator sets
- Time/Date synchronization over Simple Network Time Protocol (SNTP)
- Cylinder head/exhaust temperature monitoring (Temperatures come from J1939 or CANopen devices)
- Woodward ToolKit™ software for flexible setup from a single connection to the network. The ToolKit can be accessed either via USB, or via Ethernet, or via CAN port.
- Multi-lingual capability: English, German, Spanish, French, Italian, Portuguese, Japanese, Chinese, Russian, Turkish, Polish, Slovakian, Finnish, Swedish

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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## STANDARD SCOPE OF SUPPLY

All our gensets are fitted with:

- Industrial water cooled DIESEL engine
- Electric starter & charge alternator
- Standard air filter
- Schneider or ABB 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
- 4 lifting points on the chassis, lifting bar on the top included from 165 kVA ESP or optional
- highly durable QUALICOAT certified epoxy paint
- frame height optimized to allow it to be moved safely by forklift
- enclosure made of new high-quality European steel with enhanced corrosion resistance
- IP 64 locks, made from stainless materials
- 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 110 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

## 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 <70%.

**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 <70%.

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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 INFORMATION

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".

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