K12M

Engine ref.	KDW1603
Alternator ref.	AT00404T
Performance class	G2

GENERAL CHARACTERISTICS

Frequency (Hz)	50
Voltage (V)	230 single phase
Standard Control Panel	APM303
Optional control panel	TELYS

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
240 MONO	11.8	11.8	10.7	10.7	49
230 MONO	11.8	11.8	10.7	10.7	51
220 MONO	11.8	11.8	10.7	10.7	54

DIMENSIONS COMPACT VERSION

Length (mm)	1410
Width (mm)	720
Height (mm)	1020
Dry weight (kg)	440
Tank capacity (L)	50

DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	M126
Length (mm)	1750
Width (mm)	775
Height (mm)	1230
Dry weight (kg)	610
Tank capacity (L)	50
Acoustic pressure level @1m in dB(A)	74
Sound power level guaranteed (Lwa)	91
Acoustic pressure level @7m in dB(A)	61

DESCRIPTIVE

- Mechanic governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for wiring 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
- 12 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 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.

ASSOCIATED UNCERTAINLY

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

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ENGINE CHARACTERISTICS

GENERAL ENGINE DATA

Engine model	KOHLER DIESEL
Engine ref.	KDW1603
Air inlet	Athmo
Cylinders arrangement	L
Number of cylinders	3
Displacement (C.I.)	1.65
Air coolant	
Bore (mm) x Stroke (mm)	88 x 90.40
Compression ratio	22 : 1
Speed (RPM)	1500
Pistons speed (m/s)	4.52
Maximum stand-by power at rated RPM (kW)	15.50
Frequency regulation (%)	+/- 2.5%
BMEP (bar)	6.79
Governor type	Mechanical

COOLING SYSTEM

Radiator & Engine capacity (L)	5.80
Max water temperature (°C)	110
Outlet water temperature (°C)	
Fan power (kW)	0.90
Fan air flow w/o restriction (m3/s)	0.85
Available restriction on air flow (mm Water Column)	
Type of coolant	Glycol-Ethylene
Thermostat (°C)	80

EMISSIONS

Emission PM (g/kW.h)
Emission CO (g/kW.h)
Emission HCNOx (g/kWh)
Emission HC (g/kW.h)

EXHAUST

Exhaust gas temperature (°C)	460
Exhaust gas flow (L/s)	46
Max. exhaust back pressure (mm EC)	500

FUEL

Consumption @ 110% load (L/h)	5.30
Consumption @ 100% load (L/h)	4.90
Consumption @ 75% load (L/h)	3.70
Consumption @ 50% load (L/h)	2.70
Maximum fuel pump flow (L/h)	65

OIL

Oil capacity (L)	4.40
Min. oil pressure (bar)	1.50
Max. oil pressure (bar)	10
Oil consumption 100% load (L/h)	
Carter oil capacity (L)	3.80

HEAT BALANCE

Heat rejection to exhaust (kW)	10
Radiated heat to ambiant (kW)	3
Haet rejection to coolant (kW)	15,5

AIR INTAKE

Max. intake restriction (mm EC)	200
Intake air flow (L/s)	19

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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator ref.	AT00404T
Number of Phase	Single phase
Power factor (Cos Phi)	1
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, 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
Total Harmonic Distortion, on load DHT (%)	3.6
Wave form : NEMA=TIF	<45
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	+/- 1%
Recovery time (Delta U = 20% transcient) (ms)	500
Indication of protection	IP 23
Technology	Without collar or brush

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	13
Standby Rating 27°C (kVA)	14.80
Efficiencies 100% of load (%)	81.40
Air flow (m3/s)	0.0530
Short circuit ratio (Kcc)	0.62
Direct axis synchro reactance unsaturated (Xd) (%)	180
Quadra axis synchro reactance unsaturated (Xq) (%)	78
Open circuit time constant (T'do) (ms)	850
Direct axis transcient reactance saturated (X'd) (%)	16.80
Short circuit transcient time constant (T'd) (ms)	44
Direct axis subtranscient reactance saturated (X"d) (%)	9.60
Subtranscient time constant (T"d) (ms)	14
Quadra axis subtranscient reactance saturated (X"q) (%)	22
Subtranscient time constant (T"q) (ms)	
Zero sequence reactance unsaturated (Xo) (%)	3.30
Negative sequence reactance saturated (X2) (%)	14.40
Armature time constant (Ta) (ms)	12
No load excitation current (io) (A)	0.50
Full load excitation current (ic) (A)	1.50
Full load excitation voltage (uc) (V)	15
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	50
Transcient dip (4/4 load) - PF : 0,8 AR (%)	15.50
No load losses (W)	506.05
Heat rejection (W)	2307
Unbalanced load acceptance ratio (%)	

DIMENSIONS

BASE AND CANOPY SPECIFICATIONS

Commercial reference of the enclosure	M126 DW
Length (mm)	1797
Width (mm)	775
Height (mm)	1391
Dry weight (kg)	760
Tank capacity (L)	93
Acoustic pressure level @1m in dB(A)	74
Sound power level guaranteed (Lwa)	91
Acoustic pressure level @7m in dB(A)	61

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CONTROL PANEL

APM303, comprehensive and simple

The APM303 is a versatile unit which can be operated in manual or automatic mode. Equipped with an LCD screen, the user-friendly APM303 offers high-quality basic functions to guarantee simple, reliable operation and supervision of your generating set. It offers the following features:
Measurements:
phase-to-neutral and phase-to-phase voltages, active power currents, effective power, power factors, Kw/h energy meter
Fuel, oil pressure and coolant temperature levels
Supervision:
Modbus RTU communication on RS485
Reports:
2 configurable reports
Safety features:
Overspeed, oil pressure
Coolant temperatures
Minimum and maximum voltage
Minimum and maximum frequency
Maximum current
Maximum active power
Phase sequence
Traceability:
Stack of 12 stored events
For further information, please refer to the data sheet for the APM303.

TELYS, ergonomic and user-friendly

The highly versatile TELYS 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 TELYS 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.