K20U

Engine ref.	KDI1903M
Alternator ref.	KH00404T
Performance class	G2

DESCRIPTIVE

- Mechanic 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
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

GENERAL CHARACTERISTICS

Frequency (Hz)	60 Hz
Voltage (V)	480/277
Standard Control Panel	APM303
Optional control panel	TELYS
Optional Control Panel	NA

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
480/277	20	25	18,2	22,7	30
440/254	20	25	18,2	22,7	33
220/127	20	25	18,2	22,7	66
208/120	18	22,5	16,4	20,5	62

DIMENSIONS COMPACT VERSION

Length (mm)	1410
Width (mm)	720
Height (mm)	1080
Dry weight (kg)	490
Tank capacity (L)	50

DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	M126
Length (mm)	1750
Width (mm)	775
Height (mm)	1230
Dry weight (kg)	660
Tank capacity (L)	50
Acoustic pressure level @1m in dB(A)	77
Guaranteed acoustic power level (Lwa)	92
Acoustic pressure level @7m in dB(A)	67

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 UNCERTAINTY

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 brand	KOHLER DIESEL
Engine ref.	KDI1903M
Air inlet system	Athmo
Cylinders configuration	L
Number of cylinders	3
Displacement (L)	1,86
Charge Air coolant	
Bore (mm) x Stroke (mm)	88 x 102
Compression ratio	18.5 : 1
Speed (RPM)	1800
Pistons speed (m/s)	6,12
Maximum stand-by power at rated RPM (kW)	22,20
Frequency regulation, steady state (%)	+/- 2.5%
BMEP (bar)	7,20
Governor type	Mechanical

COOLING SYSTEM

Radiator & Engine capacity (L)	6,80
Fan power (kW)	0,90
Fan air flow w/o restriction (m3/s)	
Available restriction on air flow (mm H2O)	
Type of coolant	Glycol-Ethylene

EMISSIONS

Emission PM (g/kWh)	
Emission CO (g/kW.h)	
Emission HC+NOx (g/kWh)	0
Emission HC (mg/Nm3) 5% O2	

EXHAUST

Exhaust gas temperature @ ESP 60Hz (°C)	520
Exhaust gas flow @ ESP 60Hz (L/s)	70
Max. exhaust back pressure (mm H2O)	600

FUEL

Fuel consumption 110% load (L/hr)	6,10
Fuel consumption 100% load (L/hr)	5,60
Fuel consumption 75% (L/h)	4,20
Fuel consumption 50% (L/h)	2,90
Maximum fuel pump flow (L/h)	30

OIL

Oil capacity (L)	8,70
Min. oil pressure (bar)	1,50
Max. oil pressure (bar)	10
Oil consumption 100% ESP (L/h)	0,10
Oil sump capacity (L)	8,50

HEAT BALANCE

Heat rejection to exhaust (kW)	15
Radiated heat to ambiant (kW)	
Haet rejection to coolant HT (kW)	19,20

AIR INTAKE

Max. intake restriction (mm H2O)	170
Intake air flow (L/s)	

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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator ref.	KH00404T
Number of Phase	Three phase
Power factor (Cos Phi)	0,80
Altitude (m)	0 à 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 (H/163°C), standby 27°C	H / 163°K
Total Harmonic Distortion in no-load DHT (%)	3,6
AVR Regulation	Yes
Total Harmonic Distortion, on linear load DHT (%)	2,0
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)	200
Indication of protection	IP 23
Technology	Without collar or brush

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	24
Standby Rating 27°C (kVA)	25,80
Efficiencies 100% of load (%)	89,50
Air flow (m3/s)	0,0970
Short circuit ratio (Kcc)	0,62
Direct axis synchro reactance unsaturated (Xd) (%)	184,50
Quadra axis synchro reactance unsaturated (Xq) (%)	80
Open circuit time constant (T'do) (ms)	850
Direct axis transcient reactance saturated (X'd) (%)	14,60
Short circuit transcient time constant (T'd) (ms)	44
Direct axis subtranscient reactance saturated (X"d) (%)	8,40
Subtranscient time constant (T"d) (ms)	14
Quadra axis subtranscient reactance saturated (X"q) (%)	19,20
Subtranscient time constant (T"q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	3,38
Negative sequence reactance saturated (X2) (%)	12,50
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)	15,90
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	76
Transcient dip (4/4 load) - PF : 0,8 AR (%)	14,10
No load losses (W)	569
Heat rejection (W)	2253
Unbalanced load acceptance ratio (%)	100

DIMENSIONS

Dimensions soundproofed version

Type soundproofing	M126
Length (mm)	1750
Width (mm)	775
Height (mm)	1230
Dry weight (kg)	660
Tank capacity (L)	50
Acoustic pressure level @1m in dB(A)	77
Guaranteed acoustic power level (Lwa)	92
Acoustic pressure level @7m in dB(A)	67

Dimensions DW soundproofed version

Type soundproofing	M126 DW
Length (mm)	1797
Width (mm)	775
Height (mm)	1391
Dry weight (kg)	800
Tank capacity (L)	93
Acoustic pressure level @1m in dB(A)	77

Dimensions DW compact version

Type soundproofing	
Length (mm)	1797
Width (mm)	775
Height (mm)	1240
Dry weight (kg)	630
Tank capacity (L)	93
Acoustic pressure level @1m in dB(A)	
Guaranteed acoustic power level (Lwa)	
Acoustic pressure level @7m in dB(A)	

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Guaranteed acoustic power level (Lwa)	92
Acoustic pressure level @7m in dB(A)	67

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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. 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.

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.

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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.

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