TRANSDIESEL

KOHLER SDMO

KV650C2

Engine ref.	TAD1642GE
Alternator ref.	KH02880T
Performance class	G3

GENERAL CHARACTERISTICS

Frequency (Hz)	50 Hz
Voltage (V)	400/230
Standard Control Panel	TELYS
Optional control panel	APM802
Optional Control Panel	M80
Optional control panel	NA

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
415/240	520	650	473	591	904
400/230	520	650	473	591	938
380/220	520	650	473	591	988
240 TRI	520	650	473	591	1564
230 TRI	520	650	473	591	1632
220 TRI	504	630	458	573	1653

DIMENSIONS COMPACT VERSION

Length (mm)	3470
Width (mm)	1630
Height (mm)	2095
Dry weight (kg)	3780
Tank capacity (L)	610

DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	M230
Length (mm)	5031
Width (mm)	1690
Height (mm)	2672
Dry weight (kg)	5300
Tank capacity (L)	610
Acoustic pressure level @1m in dB(A)	80
Sound power level guaranteed (Lwa)	100
Acoustic pressure level @7m in dB(A)	70

DESCRIPTIVE

- 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 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	VOLVO
Engine ref.	TAD1642GE
Air inlet system	Turbo
Cylinders configuration	L
Number of cylinders	6
Displacement (L)	16.12
Charge Air coolant	Air/Air 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)	565
Frequency regulation, steady state (%)	+/- 0.5%
BMEP (bar)	25.50
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (L)	60
Fan power (kW)	11
Fan air flow w/o restriction (m3/s)	10
Available restriction on air flow (mm H2O)	30
Type of coolant	Glycol-Ethylene

EMISSIONS

Emission PM (g/kW.h)	0.11
Emission CO (g/kW.h)	0.67
Emission HC+NOx (g/kWh)	5.67
Emission HC (mg/Nm3) 5% O2	

EXHAUST

Exhaust gas temperature @ ESP 50Hz (°C)	482
Exhaust gas flow @ ESP 50 Hz (L/s)	1708
Max. exhaust back pressure (mm H2O)	1000

FUEL

Consumption @ 110% load (L/h)	132.90
Consumption @ 100% load (L/h)	119.60
Consumption @ 75% load (L/h)	88.40
Consumption @ 50% load (L/h)	58.90
Maximum fuel pump flow (L/h)	180

OIL

Oil capacity (L)	48
Min. oil pressure (bar)	0.70
Max. oil pressure (bar)	6.50
Oil consumption 100% ESP (L/h)	0.70
Oil sump capacity (L)	42

HEAT BALANCE

Heat rejection to exhaust (kW)	427
Radiated heat to ambiant (kW)	20
Haet rejection to coolant HT (kW)	218

AIR INTAKE

Max. intake restriction (mm H2O)	500
Intake air flow (L/s)	676

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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator ref.	KH02880T
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	No
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 (%)	<2
AVR Regulation	Yes
Total Harmonic Distortion, on linear load DHT (%)	<2
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	0.50
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)	600
Standby Rating 27°C (kVA)	660
Efficiencies 100% of load (%)	94.50
Air flow (m3/s)	0.90
Short circuit ratio (Kcc)	0.3650
Direct axis synchro reactance unsaturated (Xd) (%)	330
Quadra axis synchro reactance unsaturated (Xq) (%)	168
Open circuit time constant (T'do) (ms)	1997
Direct axis transcient reactance saturated (X'd) (%)	16.50
Short circuit transcient time constant (T'd) (ms)	100
Direct axis subtranscient reactance saturated (X"d) (%)	11.50
Subtranscient time constant (T"d) (ms)	10
Quadra axis subtranscient reactance saturated (X"q) (%)	15.20
Subtranscient time constant (T"q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	0.60
Negative sequence reactance saturated (X2) (%)	13.43
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0.92
Full load excitation current (ic) (A)	3.65
Full load excitation voltage (uc) (V)	62.10
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	1144.84
Transcient dip (4/4 load) - PF : 0,8 AR (%)	15
No load losses (W)	6794.24
Heat rejection (W)	27572.30
Unbalanced load acceptance ratio (%)	70

DIMENSIONS

Dimensions soundproofed version

Type soundproofing	M230
Length (mm)	5031
Width (mm)	1690
Height (mm)	2672
Dry weight (kg)	5300
Tank capacity (L)	610
Acoustic pressure level @1m in dB(A)	80
Sound power level guaranteed (Lwa)	100
Acoustic pressure level @7m in dB(A)	70

Dimensions DW soundproofed version

Type soundproofing	M230 DW
Length (mm)	5083
Width (mm)	1690
Height (mm)	2932
Dry weight (kg)	5910
Tank capacity (L)	1950

Dimensions DW compact version

Type soundproofing	
Length (mm)	5083
Width (mm)	1960
Height (mm)	2355
Dry weight (kg)	4420
Tank capacity (L)	1950
Acoustic pressure level @1m in dB(A)	
Sound power level guaranteed (Lwa)	
Acoustic pressure level @7m in dB(A)	
Acoustic pressure level @1m in dB(A)	80
Sound power level guaranteed (Lwa)	100
Acoustic pressure level @7m in dB(A)	70

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CONTROL PANEL

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.

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.
This unit is available as standard on all generating sets from 275 Kva designed for coupling. It is optional on the rest of our range.
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.