WBPS
POWER YOU CAN TRUST

KOHLER
Authorized Distributor

R650C2

GENERATOR SPECIFICATION

R650C2	
Engine ref.	TAD1642GE
Alternator ref.	AT02880T
Canopy	M230C
Performance class	G3

GENERAL CHARACTERISTICS	
Frequency (Hz)	50
Voltage (V)	400/230
Standard Control Panel	TELYS

SMALL AUTONOMY DIMENSIONS	
Length (mm)	5031
Width (mm)	1690
Height (mm)	2922
Dry weight (kg)	5300
Tank capacity (L)	610

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 isgiven for 25°C Air Intlet Temperature, of a barometric pressure of 100kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

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.

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GENERAL ENGINE DATA	
Engine model	VOLVO
Engine ref.	TAD1642GE
Air inlet	Turbo
Cylinders arrangement	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 (%)	+/- 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 Water Column)	30
Type of coolant	Glycol-Ethylene

EMISSIONS	
Emission PM (g/kW.h)	0.100
Emission CO (g/kW.h)	1.2
Emission HC+NOx (g/kWh)	-
Emission HC (g/kW.h)	0.12

EXHAUST	
Exhaust gas temperature (°C)	494
Exhaust gas flow (L/s)	1678
Max. exhaust back pressure (mm EC)	1000

FUEL	
Consumption @ 110% load (L/h)	129,75
Consumption @ 100% load (L/h)	115,93
Consumption @ 75% load (L/h)	85,21
Consumption @ 50% load (L/h)	57,10
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)	0,10
Carter oil capacity (L)	42

HEAT BALANCE	
Heat rejection to exhaust (kW)	426
Radiated heat to ambiant (kW)	20
Heat rejection to coolant (kW)	218

AIR INTAKE	
Max. intake restriction (mm EC)	500
Intake air flow (L/s)	676

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ALTERNATOR SPECIFICATION

GENERAL DATA	
Alternator ref.	AT02880T
Number of Phase	Three phase
Power factor (Cos Phi)	0,80
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 (%)	<1.5
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 (+/- %)	-
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)	0,37
Direct axis synchro reactance unsaturated (Xd) (%)	330
Quadra axis synchro reactance unsaturated (Xq) (%)	198
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) (%)	11,40
Subtranscient time constant (T"d) (ms)	10
Quadra axis subtranscient reactance saturated (X"q) (%)	15
Subtranscient time constant (T"q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	0,90
Negative sequence reactance saturated (X2) (%)	13,20
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0,99
Full load excitation current (ic) (A)	3,70
Full load excitation voltage (uc) (V)	36
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	1400
Transcient dip (4/4 load) - PF : 0,8 AR (%)	12,10
No load losses (W)	6780
Heat rejection (W)	27490
Unbalanced load acceptance ratio (%)	70