

GENERATOR SPECIFICATION



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 Inlet 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.

R450C3

Engine ref.	TAD1355GE
Alternator ref.	KH01741T
Canopy	M3228
Performance class	G3

GENERAL CHARACTERISTICS

Frequency (Hz)	50
Voltage (V)	400/230
Standard Control Panel	APM303

SMALL AUTONOMY DIMENSIONS

Length (mm)	5000
Width (mm)	1611
Height (mm)	2600
Dry weight (kg)	5489
Tank capacity (L)	1481

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.



GENERAL ENGINE DATAS

Engine model	VOLVO
Engine ref.	TAD1355GE
Air inlet	Turbo
Cylinders arrangement	L
Number of cylinders	6
Displacement (L)	12,78
Charge Air coolant	Air/Air DC
Bore (mm) x Stroke (mm)	131 x 158
Compression ratio	18.1 : 1
Speed (RPM)	1500
Pistons speed (m/s)	7,90
Maximum stand-by power at rated RPM (kW)	404
Frequency regulation (%)	+/- 0.25%
BMEP (bar)	23
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (L)	44
Fan power (kW)	10
Fan air flow w/o restriction (m3/s)	0
Available restriction on air flow (mm Water Column)	0
Type of coolant	Glycol-Ethylene

EMISSIONS

Emission PM (g/kW.h)	0,14
Emission CO (g/kW.h)	0,93
Emission HC+NOx (g/kWh)	3,61
Emission HC (g/kW.h)	0,10

EXHAUST

Exhaust gas temperature (°C)	476
Exhaust gas flow (L/s)	970
Max. exhaust back pressure (mm EC)	1000

FUEL

Consumption @ 110% load (L/h)	92,70
Consumption @ 100% load (L/h)	83,40
Consumption @ 75% load (L/h)	66,70
Consumption @ 50% load (L/h)	48,20
Maximum fuel pump flow (L/h)	112

OIL

Oil capacity (L)	36
Min. oil pressure (bar)	0
Max. oil pressure (bar)	0
Oil consumption 100% ESP (L/h)	0
Carter oil capacity (L)	30

HEAT BALANCE

Heat rejection to exhaust (kW)	236
Radiated heat to ambient (kW)	12
Heat rejection to coolant (kW)	156

AIR INTAKE

Max. intake restriction (mm EC)	510
Intake air flow (L/s)	383



GENERAL DATA	
Alternator ref.	KH01741T
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 (%)	<2
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% transient) (ms)	500
Indication of protection	IP 23
Technology	Without collar or brush

OTHER DATA	
Continuous Nominal Rating 40°C (kVA)	400
Standby Rating 27°C (kVA)	440
Efficiencies 100% of load (%)	93,10
Air flow (m3/s)	0,90
Short circuit ratio (Kcc)	0,2940
Direct axis synchro reactance unsaturated (Xd) (%)	393
Quadra axis synchro reactance unsaturated (Xq) (%)	200
Open circuit time constant (T'do) (ms)	1771
Direct axis transient reactance saturated (X'd) (%)	22,10
Short circuit transient time constant (T'd) (ms)	100
Direct axis subtransient reactance saturated (X''d) (%)	15,50
Subtransient time constant (T''d) (ms)	10
Quadra axis subtransient reactance saturated (X''q) (%)	20,90
Subtransient time constant (T''q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	0,90
Negative sequence reactance saturated (X2) (%)	18,26
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0,85
Full load excitation current (ic) (A)	3,92
Full load excitation voltage (uc) (V)	67,10
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	571,36
Transient dip (4/4 load) - PF : 0,8 AR (%)	17
No load losses (W)	5158,09
Heat rejection (W)	23478,15
Unbalanced load acceptance ratio (%)	70