



## V700C2

Engine ref.	TWD1643GE
Alternator ref.	LSA 49.1 S4
Performance class	G3

### GENERAL CHARACTERISTICS

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

### POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
220 TRI	511	639	475	593	1677
415/240	560	700	520	650	974
400/230	560	700	520	650	1010
380/220	553	691	513	642	1050
240 TRI	558	697	518	647	1677
230 TRI	535	669	497	621	1679

#### DESCRIPTIVE

- Electronic 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
- 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 Inlet 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.

### DIMENSIONS COMPACT VERSION

Length (mm)	3470
Width (mm)	1630
Height (mm)	2050
Dry weight (kg)	4020
Tank capacity (L)	610

### DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	M230
Length (mm)	5031
Width (mm)	1690
Height (mm)	2662
Dry weight (kg)	5550
Tank capacity (L)	610
Acoustic pressure level @1m in dB(A)	85
Sound power level guaranteed (Lwa)	105



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### ENGINE CHARACTERISTICS

#### GENERAL ENGINE DATA

Engine model	VOLVO
Engine ref.	TWD1643GE
Air inlet	Turbo
Cylinders arrangement	L
Number of cylinders	6
Displacement (C.I.)	16.12
Air coolant	Air/Water 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)	613
Frequency regulation (%)	+/- 0.5%
BMEP (bar)	27.44
Governor type	Electronic

#### COOLING SYSTEM

Radiator & Engine capacity (L)	95
Max water temperature (°C)	103
Outlet water temperature (°C)	93
Fan power (kW)	17
Fan air flow w/o restriction (m <sup>3</sup> /s)	10
Available restriction on air flow (mm EC)	30
Type of coolant	Glycol-Ethylene
Thermostat (°C)	86-96

#### EMISSIONS

Emission PM (g/kW.h)	0.083
Emission CO (g/kW.h)	0.69
Emission HCNO <sub>x</sub> (g/kWh)	N/A
Emission HC (g/kW.h)	0.08

#### EXHAUST

Exhaust gas temperature (°C)	450
Exhaust gas flow (L/s)	1693
Max. exhaust back pressure (mm EC)	1000

#### FUEL

Consumption @ 110% load (L/h)	142.60
Consumption @ 100% load (L/h)	128
Consumption @ 75% load (L/h)	94.50
Consumption @ 50% load (L/h)	63
Maximum fuel pump flow (L/h)	190

#### OIL

Oil capacity (L)	48
Min. oil pressure (bar)	0.70
Max. oil pressure (bar)	6.50
Oil consumption 100% load (L/h)	0.10
Carter oil capacity (L)	42

#### HEAT BALANCE

Heat rejection to exhaust (kW)	463
Radiated heat to ambient (kW)	20
Heat rejection to coolant (kW)	218

#### AIR INTAKE

Max. intake restriction (mm EC)	150
Intake air flow (L/s)	727



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### ALTERNATOR CHARACTERISTICS

#### GENERAL DATA

Alternator brand	LERROY SOMER
Alternator ref.	LSA 49.1 S4
Number of phase	3
Power factor (Cos Phi)	0.80
Altitude (m)	0 to 1000
Overspeed (rpm)	2250
Number of pole	4
Excitation system	AREP
Insulation class	H
T° class, continuous 40°C	H / 125°K
AVR Type	R450
Total Harmonic Distortion in no-load DHT (%)	<4
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (%)	+/- 0.5%
Recovery time (Delta U = 20% transient) (ms)	500

#### OTHER DATA

Continuous Nominal Rating 40°C (kVA)	660
Standby Rating 27°C (kVA)	725
Efficiencies 4/4 load (%)	93.90
Air flow (m3/s)	1.20
Short circuit ratio (Kcc)	0.38
Direct axis synchro reactance unsaturated (Xd) (%)	343
Quadra axis synchro reactance unsaturated (Xq) (%)	205
Open circuit time constant (T"do) (ms)	1958
Direct axis transient reactance saturated (X"d) (%)	17.50
Short circuit transient time constant (T"d) (ms)	100
Direct axis subtransient reactance saturated (X""d) (%)	14
Subtransient time constant (T""d) (ms)	10
Quadra axis subtransient reactance saturated (X""q) (%)	16.30
Zero sequence reactance unsaturated (Xo) (%)	0.90
Negative sequence reactance saturated (X2) (%)	15.20
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0.90
Full load excitation current (ic) (A)	3.60
Full load excitation voltage (uc) (V)	43
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	1578
Transient dip (4/4 load) - PF : 0,8 AR (%)	13.30
No load losses (W)	8110
Heat rejection (W)	33710

### DIMENSIONS

#### CONTAINMENT

Commercial reference of the enclosure	M230 DW
Length (mm)	5083
Width (mm)	1690
Height (mm)	2922
Dry weight (kg)	6140
Tank capacity (L)	1950
Acoustic pressure level @1m in dB(A)	85
Sound power level guaranteed (Lwa)	105

TELYS, ergonomic and user-friendly

APM802 dedicated to power plant management



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.

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.

