

V410C2

Stage 2
 Engine VOLVO , TAD1241GE
 Alternator LEROY SOMER , LSA472VS3

STANDARD FEATURES

- Compliant with stage 2 of the european pollutant emissions directive
- Electronic governor
- Mechanically welded chassis with antivibration suspension
- Power circuit breaker
- Radiator for wiring T°of 50 °C [122 °F] max with mechanical fan
- Protective grille for fan and rotating parts
- 9dB(A) silencer supplied separately
- Charged DC starting battery with electrolyte
- 24 V charging alternator and starter
- Supplied with oil and coolant -30 °C
- User manual and commissioning guide



Voltage	Power ESP kWe/kVA	Power PRP kWe/kVA	Standby Amps	Dimensions	Weight
415/240	330 / 413	300 / 375	575	Length: 3160mm [124in] Width: 1340mm [53in] Height: 1805mm [71in]	3190kg [7033 lbs] Net 3670kg [8091 lbs] Gross
400/230	330 / 413	300 / 375	596		
380/220	330 / 413	300 / 375	628		
240/120	330 / 413	300 / 375	994		
230/115	330 / 413	300 / 375	1037		
220/110	330 / 413	300 / 375	1084		
200/115	330 / 413	300 / 375	1192		



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. A 10% overload capability is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1 –

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.

TERM OF USE

Standard reference conditions 40 °C Air Intlet Temp, 1100 m A.S.L. 60 % relative humidity. All engine performance data based on the above mentioned maximum continuous ratings.

Type	dB(A)@1m	dB(A)@7m	Dimensions	Weight	Tank
 M228	79.7	70	Length: 4475mm [176in] Width: 1410mm [56in] Height: 2430mm [96in]	4320kg [9524lbs] Net 4790kg [10560lbs] Gross	470 L
 M228-DW	79.7	70	Length: 4527mm [178in] Width: 1410mm [56in] Height: 2700mm [106in]	4670kg [10296lbs] Net 5984kg [13192lbs] Gross	1368 L



ENGINE SPECIFICATIONS

STANDARD FEATURES	Manufacturer / Model	VOLVO TAD1241GE , 4-strokes, Turbo , Air/Air DC 6 X
	Cylinder Arrangement	L
	Displacement	12.13L [740.2C.I.]
	Bore and Stroke	131mm [5.2in.] X 150mm [5.9in.]
	Compression ratio	17.5 : 1
	Rated RPM	1500 Rpm
	Piston Speed	7.5m/s [24.6ft./s]
	Max. stand by Power at rated RPM	354kW [474BHP]
	Frequency regulation, steady state	+/- 0.5%
	BMEP	21.9bar [317psi]
Governor : type	ELEC	
EXHAUST SYSTEM	Exhaust temperature	490°C [914°F]
	Exhaust gas flow	966L/s [2047cfm]
	Max back pressure	1000mm CE [39in. WG]
FUEL SYSTEM	110% (Stand By power)	82.2L/h [21.7gal/hr]
	100% (of the Prime Power)	74.4L/h [19.7gal/hr]
	75% (of the Prime Power)	55L/h [14.5gal/hr]
	50% (of the Prime Power)	37.4L/h [9.9gal/hr]
	Max. fuel pump flow	120L/h [31.7gal/hr]
OIL SYSTEM	Total oil capacity w/filters	35L [9.2gal]
	Oil Pressure low idle	2.5bar [36.2psi]
	Oil Pressure rated RPM	5.5bar [79.7psi]
	Oil consumption 100% load	0.11L/h [0.029gal/hr]
	Oil capacity carter	31L [8.2gal]
THERMAL BALANCE	Heat rejection to exhaust	250kW [14215Btu/mn]
	Radiated heat to ambient	17kW [967Btu/mn]
	Heat rejection to coolant	123kW [6994Btu/mn]
AIR INTAKE	Max. intake restriction	500mm CE [20in. WG]
	Engine air flow	392L/s [831cfm]
COOLANT SYSTEM	Radiator & engine capacity	44L [11.6gal]
	Max water temperature	103°C [217°F]
	Outlet water temperature	93°C [199°F]
	Fan power	9 kW
	Fan air flow w/o restriction	7.7m ³ /s [16317cfm]
	Available restriction on air flow	50mm CE [2.0in. WG]
	Type of coolant	Glycol-Ethylene
	Thermostat	82-95 °C
EMISSIONS LEVEL	PM	21.9 mg/Nm ³
	CO	217 mg/Nm ³
	Nox	1834 mg/Nm ³
	HC	30 mg/Nm ³



ALTERNATOR SPECIFICATIONS

GENERAL DATAS	Manufacturer	LEROY SOMER	
	Type	LSA472VS3	
	Number of phase	3	
	Power factor (Cos Phi)	0.8	
	Altitude	< 1000 m	
	Overspeed	2250 rpm	
	Pole : number	4	
	Exciter type	SHUNT	
	Insulation : class, temperature rise	H / H	
	Voltage regulator	R230	
	Total harmonics (TGH/THC)	< 4%	
	Wave form : NEMA = TIF – TGH/THC	< 50	
	Wave form : CEI = FHT – TGH/THC	< 2%	
	Bearing : number	1	
	Coupling	Direct	
	Voltage regulation 0 to 100% load	+/- 0.5%	
	Recovery time (20% Volt dip) ms	500 ms	
	SkVA with 90% of nominal sustained voltage (at 0.4PF)	N/A	
	OTHER DATAS	Continuous nominal rating @ 40 °C	400 kVA
		Standby rating @ 27 °C	430 kVA
Efficiencies @ 4/4 load		93.1 %	
Air flow		0.9m3/s [1906.98cfm]	
Short circuit ratio;50 (Kcc)		0.29	
Direct axis synchro reactance unsaturated (Xd)		393 %	
Quadra axis synchro reactance unsaturated (Xq)		235 %	
Open circuit time constant;50 (T'do)		1771 ms	
Direct axis transient reactance saturated (X'd)		22.1 %	
Short circuit transient time constant (T'd)		100 ms	
Direct axis subtransient reactance saturated (X''d)		17.7 %	
Subtransient time constant (T''d)		10 ms	
Quadra axis subtransient reactance saturated (X''q)		23.9 %	
Zero sequence reactance unsaturated (Xo)		0.8 %	
Negative sequence reactance saturated (X2)		20.9 %	
Armature time constant (Ta)		15 ms	
No load excitation current (io)		0.9 A	
Full load excitation current (ic)		3.9 A	
Full load excitation voltage (uc)		39 V	
Recovery time (Delta U = 20% transitoire)		500 ms	
Motor start (Delta = 20% perm. Or 50% trans.)	729 kVA		
Transient dip (4/4 charge) – PF : 1.8 AR	17.6 %		
No load losses	5.15kW [5.15Kw]		
Heat rejection	23.34 kW		



CONTROL PANEL

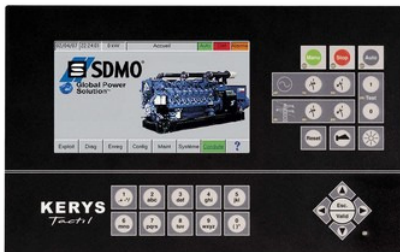
Standard



TELYS

Specifications :
Frequency meter, Ammeter, Voltmeter
Alarms and faults Oil pressure, water temperature, No start-up, Overspeed, Min/max alternator, Min/max battery voltage, Low fuel level, Emergency stop
Engine parameters Hours counter, Oil pressure, Water temperature, Engine speed, Battery voltage, Fuel level

Option



KERYS

Specifications :
Frequency meter, Ammeter, Voltmeter
Alarms and faults Oil pressure, water temperature, No start-up, Overspeed, Min/max alternator, Min/max battery voltage, Low fuel level, Emergency stop
Engine parameters Hours counter, Oil pressure, Water temperature, Engine speed, Battery voltage, Fuel level
Additional specifications Website, Troubleshooting, Assistance and Maintenance, Plotting and logging, Load impact, 8 configurations available, Compliance with international standards...

