

V450U

Engine VOLVO , TAD1640GE
Alternator LEROY SOMER , LSA472S5

STANDARD FEATURES

- 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
480/277	450 / 563	409 / 511	677	Length: 3470mm [137in] Width: 1500mm [59in] Height: 2043mm [80in]	3490kg [7694 lbs] Net 4030kg [8885 lbs] Gross
440/254	450 / 563	409 / 511	739		
240/120	429 / 536	390 / 487	1289		
230/115	411 / 514	374 / 467	1290		
220/127	450 / 563	409 / 511	1478		
208/120	450 / 563	409 / 511	1563		
600/347	450 / 563	409 / 511	542		



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, 2100 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
 M229	84	73.8	Length: 5031mm [198in] Width: 1560mm [61in] Height: 2435mm [96in]	4740kg [10450lbs] Net 5280kg [11640lbs] Gross	500 L
 M229-DW	0	0	Length: 5083mm [200in] Width: 1560mm [61in] Height: 2700mm [106in]	5370kg [11839lbs] Net 7080kg [15609lbs] Gross	1770 L





ENGINE SPECIFICATIONS

STANDARD FEATURES	Manufacturer / Model	VOLVO TAD1640GE , 4-strokes, Turbo , N/A 6 X
	Cylinder Arrangement	L
	Displacement	16.12L [983.7C.I.]
	Bore and Stroke	144mm [5.7in.] X 165mm [6.5in.]
	Compression ratio	17.5 : 1
	Rated RPM	1800 Rpm
	Piston Speed	9.9m/s [32.5ft./s]
	Max. stand by Power at rated RPM	479kW [642BHP]
	Frequency regulation, steady state	+/- 0.5%
	BMEP	17.78bar [258psi]
Governor : type	ELEC	
EXHAUST SYSTEM	Exhaust temperature	444°C [831°F]
	Exhaust gas flow	1633L/s [3460cfm]
	Max back pressure	1000mm CE [39in. WG]
FUEL SYSTEM	110% (Stand By power)	118.33L/h [31.3gal/hr]
	100% (of the Prime Power)	104.52L/h [27.6gal/hr]
	75% (of the Prime Power)	78.39L/h [20.7gal/hr]
	50% (of the Prime Power)	54.33L/h [14.4gal/hr]
	Max. fuel pump flow	180L/h [47.6gal/hr]
OIL SYSTEM	Total oil capacity w/filters	48L [12.7gal]
	Oil Pressure low idle	0.7bar [10.1psi]
	Oil Pressure rated RPM	6.5bar [94.2psi]
	Oil consumption 100% load	0.10L/h [0.026gal/hr]
	Oil capacity carter	42L [11.1gal]
THERMAL BALANCE	Heat rejection to exhaust	381kW [21664Btu/mn]
	Radiated heat to ambient	22kW [1251Btu/mn]
	Heat rejection to coolant	188kW [10690Btu/mn]
AIR INTAKE	Max. intake restriction	500mm CE [20in. WG]
	Engine air flow	710L/s [1505cfm]
COOLANT SYSTEM	Radiator & engine capacity	60L [15.9gal]
	Max water temperature	103°C [217°F]
	Outlet water temperature	93°C [199°F]
	Fan power	15 kW
	Fan air flow w/o restriction	13.5m ³ /s [28608cfm]
	Available restriction on air flow	25mm CE [1.0in. WG]
	Type of coolant	Glycol-Ethylene
	Thermostat	86-96 °C
EMISSIONS LEVEL	PM	N/A
	CO	N/A
	Nox	N/A
	HC	N/A





ALTERNATOR SPECIFICATIONS

GENERAL DATAS	Manufacturer	LEROY SOMER
	Type	LSA472S5
	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	531 kVA
	Standby rating @ 27°C	625 kVA
	Efficiencies @ 4/4 load	93.9 %
	Air flow	1.1m3/s [2330.76cfm]
	Short circuit ratio;50 (Kcc)	0.32
	Direct axis synchro reactance unsaturated (Xd)	373 %
	Quadra axis synchro reactance unsaturated (Xq)	223 %
	Open circuit time constant;50 (T'do)	1855 ms
	Direct axis transient reactance saturated (X'd)	20.1 %
	Short circuit transient time constant (T'd)	100 ms
	Direct axis subtransient reactance saturated (X''d)	16 %
	Subtransient time constant (T''d)	10 ms
	Quadra axis subtransient reactance saturated (X''q)	21.5 %
	Zero sequence reactance unsaturated (Xo)	0.1 %
	Negative sequence reactance saturated (X2)	18.8 %
	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.)	1136 kVA
	Transient dip (4/4 charge) – PF : 1.8 AR	17.3 %
No load losses	8.91 kW	
Heat rejection	29.34 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...

