

V440C2

Stage 2
 Engine VOLVO , TAD1242GE
 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 | 352 / 440 | 320 / 400 | 612 | Length: 3160mm [124in] Width: 1340mm [53in] Height: 1805mm [71in] | 3238kg [7139 lbs] Net 3718kg [8197 lbs] Gross |
| 400/230 | 352 / 440 | 320 / 400 | 635 | | |
| 380/220 | 348 / 435 | 316 / 395 | 661 | | |
| 240/120 | 352 / 440 | 320 / 400 | 1059 | | |
| 230/115 | 352 / 440 | 320 / 400 | 1105 | | |
| 220/110 | 352 / 440 | 320 / 400 | 1155 | | |
| 200/115 | 352 / 440 | 320 / 400 | 1270 | | |



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 TAD1242GE , 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 | 387kW [519BHP] |
| | Frequency regulation, steady state | +/- 0.5% |
| | BMEP | 23.9bar [346psi] |
| Governor : type | ELEC | |
| EXHAUST SYSTEM | Exhaust temperature | 505°C [941 °F] |
| | Exhaust gas flow | 1050L/s [2225cfm] |
| | Max back pressure | 1000mm CE [39in. WG] |
| FUEL SYSTEM | 110% (Stand By power) | 89.6L/h [23.7gal/hr] |
| | 100% (of the Prime Power) | 81.5L/h [21.5gal/hr] |
| | 75% (of the Prime Power) | 59.5L/h [15.7gal/hr] |
| | 50% (of the Prime Power) | 40.5L/h [10.7gal/hr] |
| | Max. fuel pump flow | 130L/h [34.3gal/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 | 0.12L/h [0.032gal/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 | 416L/s [882cfm] |
| COOLANT SYSTEM | Radiator & engine capacity | 44L [11.6gal] |
| | Max water temperature | 103°C [217°F] |
| | Outlet water temperature | 93°C [199°F] |
| | Fan power | 11 kW |
| | Fan air flow w/o restriction | 8.5m ³ /s [18012cfm] |
| | Available restriction on air flow | 43mm CE [1.7in. WG] |
| | Type of coolant | Glycol-Ethylene |
| | Thermostat | 82-95 °C |
| EMISSIONS LEVEL | PM | 23.7 mg/Nm ³ |
| | CO | 256 mg/Nm ³ |
| | Nox | 1800 mg/Nm ³ |
| | HC | 23 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...

