

# T22K

Engine MITSUBISHI , S4Q2.SD  
Alternator MECC ALTE , ECO 28 1L/4

## STANDARD FEATURES

- Mechanical governor
- Mechanically welded chassis with vibration isolators
- Main line 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 + cables
- 12 V charging alternator and starter
- Supplied with oil and coolant -30°C
- User manual and commissioning guide



| Voltage | Power ESP<br>kWe/kVA | Power PRP<br>kWe/kVA | Standby<br>Amps | Dimensions  | Weight                                       |
|---------|----------------------|----------------------|-----------------|---|--|
| 415/240 | 18 / 22              | 16 / 20              | 31              | Length: 1700mm [67in]<br>Width: 896mm [35in]<br>Height: 1121mm [44in] | 560kg [1234lbs] Net<br>660kg [1455lbs] Gross |
| 400/230 | 18 / 22              | 16 / 20              | 32              |   |  |
| 380/220 | 18 / 22              | 16 / 20              | 33              |   |  |
| 240/120 | 18 / 22              | 16 / 20              | 53              |   |  |
| 230/115 | 18 / 22              | 16 / 20              | 55              |   |  |
| 220/110 | 18 / 22              | 16 / 20              | 58              |   |  |
| 220/127 | 16 / 20              | 15 / 18              | 52              |   |  |
| 200/115 | 18 / 22              | 16 / 20              | 64              |   |  |

## 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 25 °C Air Inlet Temp, 100 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  |
|------|----------|----------|--|--------------------------|-------|
| M127 | 71       | 61       | Length: 2080mm<br>[82in]                     | 790kg [1741lbs]<br>Net   | 100 L |
|      |          |          | Width: 960mm [38in]<br>Height: 1415mm [56in] | 890kg [1962lbs]<br>Gross |       |





## ENGINE SPECIFICATIONS

|                   |                                    |  |
|-------------------|------------------------------------|--|
| STANDARD FEATURES | Manufacturer / Model               | mitsubishi S4Q2.SD , 4-strokes, Athmo ,<br>N/A 4 X |
|                   | Cylinder Arrangement               | L  |
|                   | Displacement                       | 2.50L [152.6C.I.]                                  |
|                   | Bore and Stroke                    | 88mm [3.5in.] X 103mm [4.1in.]                     |
|                   | Compression ratio                  | 22 : 1   |
|                   | Rated RPM                          | 1500 Rpm   |
|                   | Piston Speed                       | 5.15m/s [16.9ft./s]                                |
|                   | Max. stand by Power at rated RPM   | 23.87kW [32BHP]                                    |
|                   | Frequency regulation, steady state | +/-2. 5%   |
|                   | BMEP                               | 6.92bar [100psi]                                   |
|                   | Governor : type                    | Meca   |
| EXHAUST SYSTEM    | Exhaust temperature                | 600°C [1112°F]                                     |
|                   | Exhaust gas flow                   | 74L/s [157cfm]                                     |
|                   | Max back pressure                  | 680mm CE [27in. WG]                                |
| FUEL SYSTEM       | 110% (Stand By power )             | 6.8L/h [1.8gal/hr]                                 |
|                   | 100% (of the Prime Power)          | 6.2L/h [1.6gal/hr]                                 |
|                   | 75% (of the Prime Power)           | 4.7L/h [1.2gal/hr]                                 |
|                   | 50% (of the Prime Power)           | 3.4L/h [0.9gal/hr]                                 |
|                   | Max. fuel pump flow                | 36L/h [9.5gal/hr]                                  |
| OIL SYSTEM        | Total oil capacity w/filters       | 6.5L [1.7gal]                                      |
|                   | Oil Pressure low idle              | 1bar [14.5psi]                                     |
|                   | Oil Pressure rated RPM             | 5bar [72.5psi]                                     |
|                   | Oil consumption 100% load          | 0.06L/h [0.0gal/hr]                                |
|                   | Oil capacity carter                | 5.5L [1.5gal]                                      |
| THERMAL BALANCE   | Heat rejection to exhaust          | 21kW [1194Btu/mn]                                  |
|                   | Radiated heat to ambient           | 3kW [171Btu/mn]                                    |
|                   | Heat rejection to coolant          | 19kW [1080Btu/mn]                                  |
| AIR INTAKE        | Max. intake restriction            | 200mm CE [8in. WG]                                 |
|                   | Engine air flow                    | 29L/s [61cfm]                                      |
| COOLANT SYSTEM    | Radiator & engine capacity         | 8.1L [2.1gal]                                      |
|                   | Max water temperature              | 111°C [232°F]                                      |
|                   | Outlet water temperature           | 93°C [199°F]                                       |
|                   | Fan power                          | 0.8 kW   |
|                   | Fan air flow w/o restriction       | 0.8m3/s [1695cfm]                                  |
|                   | Available restriction on air flow  | 10mm CE [0.4in. WG]                                |
|                   | Type of coolant                    | Gencool  |
|                   | Thermostat                         | 76.5-90 °C   |
| EMISSIONS LEVEL   | PM                                 | 120 mg/Nm3   |
|                   | CO                                 | 290 mg/Nm3   |
|                   | Nox                                | 1020 mg/Nm3  |
|                   | HC                                 | 30 mg/Nm3  |



## ALTERNATOR SPECIFICATIONS

|                      |   |                       |
|----------------------|---|-----------------------|
| GENERAL<br><br>DATAS | Manufacturer / Type                                   | MECC ALTE ECO 28 1L/4 |
|                      | Number of phase                                       | 3                     |
|                      | Power factor (Cos Phi)                                | 0.8                   |
|                      | Altitude  | 1000                  |
|                      | Overspeed   | [N/A]                 |
|                      | Pole : number   | 4                     |
|                      | Exciter type  | No                    |
|                      | Insulation : class, temperature rise                  | H / H                 |
|                      | Voltage regulator                                     | AVR                   |
|                      | Sustained short circuit current                       | [N/A] C               |
|                      | Total harmonics (TGH/THC)                             | [N/A]                 |
|                      | Wave form : NEMA = TIF – TGH/THC                      | [N/A]                 |
|                      | Wave form : CEI = FHT – TGH/THC                       | 2                     |
|                      | Bearing : number                                      | 1                     |
|                      | Coupling  | Direct                |
|                      | Voltage regulation 0 to 100% load                     | [N/A]                 |
|                      | Recovery time (20% Volt dip) ms                       | [N/A]                 |
|                      | SkVA with 90% of nominal sustained voltage (at 0.4PF) | N/A                   |
| OTHER<br><br>DATAS   | Continuous nominal rating @ 40°C                      | 20 kVA                |
|                      | Standby rating @ 27°C                                 | 20 kVA                |
|                      | Efficiencies @ 4/4 load                               | 84.2 %                |
|                      | Air flow  | 5.5m3/s [11653.79cfm] |
|                      | Short circuit ratio;50 (Kcc)                          | 0.65                  |
|                      | Direct axis synchro reactance unsaturated (Xd)        | 175 %                 |
|                      | Quadra axis synchro reactance unsaturated (Xq)        | 76 %                  |
|                      | Open circuit time constant;50 (T'do)                  | 0.87 ms               |
|                      | Direct axis transient reactance saturated (X'd)       | 16.5 %                |
|                      | Short circuit transient time constant (T'd)           | 0.045 ms              |
|                      | Direct axis subtransient reactance saturated (X''d)   | 9.4 %                 |
|                      | Subtransient time constant (T''d)                     | 0.015 ms              |
|                      | Quadra axis subtransient reactance saturated (X''q)   | 21 %                  |
|                      | Zero sequence reactance unsaturated (Xo)              | 3.2 %                 |
|                      | Negative sequence reactance saturated (X2)            | 14.2 %                |
|                      | Armature time constant (Ta)                           | 0.013 ms              |
|                      | No load excitation current (io)                       | [N/A]                 |
|                      | Full load excitation current (ic)                     | A                     |
|                      | Full load excitation voltage (uc)                     | [N/A]                 |
|                      | Recovery time (Delta U = 20% transitoire)             | [N/A]                 |
|                      | Motor start (Delta = 20% perm. Or 50% trans.)         | [N/A]                 |
|                      | Transient dip (4/4 charge) – PF : 1.8 AR              | [N/A]                 |
| No load losses       | [N/A]   |                       |
| Heat rejection       | [N/A]   |                       |



## CONTROL PANEL

### Standard



### NEXYS

Specifications :

Frequency meter, Ammeter, Voltmeter  
Alarms and faults Oil pressure, water temperature, Overcrank, Overspeed (>60 kVA), Min/max alternator, Low fuel level, Emergency stop  
Engine parameters Hours counter, Engine speed, Battery voltage, Fuel level, Air preheating

### Option



### 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

