



#### DESCRIPTIVE

- Mechanic 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
- 12 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

## T12KM

|                   |          |
|-------------------|----------|
| Engine ref.       | S4L2-SD  |
| Alternator ref.   | AT00404T |
| Performance class | G2       |

#### GENERAL CHARACTERISTICS

|                        |                  |
|------------------------|------------------|
| Frequency (Hz)         | 50               |
| Voltage (V)            | 230 single phase |
| Standard Control Panel | APM303           |
| Optional control panel | TELYS            |

#### POWER

| Voltage  | ESP |     | PRP  |      | Standby Amps |
|----------|-----|-----|------|------|--------------|
|          | kWe | kVA | kWe  | kVA  |              |
| 240 MONO | 12  | 12  | 10.9 | 10.9 | 50           |
| 230 MONO | 12  | 12  | 10.9 | 10.9 | 52           |
| 220 MONO | 12  | 12  | 10.9 | 10.9 | 55           |

#### DIMENSIONS COMPACT VERSION

|                   |      |
|-------------------|------|
| Length (mm)       | 1405 |
| Width (mm)        | 715  |
| Height (mm)       | 1053 |
| Dry weight (kg)   | 406  |
| Tank capacity (L) | 50   |

#### DIMENSIONS SOUNDPROOFED VERSION

|                                       |      |
|---------------------------------------|------|
| Commercial reference of the enclosure | M126 |
| Length (mm)                           | 1750 |
| Width (mm)                            | 775  |
| Height (mm)                           | 1230 |
| Dry weight (kg)                       | 630  |
| Tank capacity (L)                     | 50   |
| Acoustic pressure level @1m in dB(A)  | 72   |
| Sound power level guaranteed (Lwa)    | 88   |
| Acoustic pressure level @7m in dB(A)  | 59   |

appropriated preventive measures.

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# T12KM

## ENGINE CHARACTERISTICS

### GENERAL ENGINE DATA

|  |            |
|--|------------|
| Engine model                             | mitsubishi |
| Engine ref.                              | S4L2-SD    |
| Air inlet                                | Athmo      |
| Cylinders arrangement                    | L          |
| Number of cylinders                      | 4          |
| Displacement (C.I.)                      | 1.76       |
| Air coolant                              |            |
| Bore (mm) x Stroke (mm)                  | 78 x 92    |
| Compression ratio                        | 22 : 1     |
| Speed (RPM)                              | 1500       |
| Pistons speed (m/s)                      | 4.60       |
| Maximum stand-by power at rated RPM (kW) | 15.80      |
| Frequency regulation (%)                 | +/- 2.5%   |
| BMEP (bar)                               | 6.55       |
| Governor type                            | Mechanical |

### COOLING SYSTEM

|   |                 |
|---|-----------------|
| Radiator & Engine capacity (L)                      | 4.90            |
| Max water temperature (°C)                          | 111             |
| Outlet water temperature (°C)                       | 93              |
| Fan power (kW)                                      | 0.70            |
| Fan air flow w/o restriction (m3/s)                 | 0.80            |
| Available restriction on air flow (mm Water Column) | 10              |
| Type of coolant                                     | Glycol-Ethylene |
| Thermostat (°C)                                     | 82-95           |

### EMISSIONS

|                        |     |
|------------------------|-----|
| Emission PM (mg/Nm3)   | 100 |
| Emission CO (mg/Nm3)   | 120 |
| Emission HCNOx (g/kWh) |     |
| Emission HC (mg/Nm3)   | 40  |

### EXHAUST

|                                    |       |
|------------------------------------|-------|
| Exhaust gas temperature (°C)       | 410   |
| Exhaust gas flow (L/s)             | 48.70 |
| Max. exhaust back pressure (mm EC) | 700   |

### FUEL

|                               |      |
|-------------------------------|------|
| Consumption @ 110% load (L/h) |      |
| Consumption @ 100% load (L/h) | 4.40 |
| Consumption @ 75% load (L/h)  | 3.40 |
| Consumption @ 50% load (L/h)  | 2.60 |
| Maximum fuel pump flow (L/h)  | 18   |

### OIL

|                                 |        |
|---------------------------------|--------|
| Oil capacity (L)                | 5.90   |
| Min. oil pressure (bar)         | 1      |
| Max. oil pressure (bar)         | 4      |
| Oil consumption 100% load (L/h) | 0.0250 |
| Carter oil capacity (L)         | 5.40   |

### HEAT BALANCE

|                                |    |
|--------------------------------|----|
| Heat rejection to exhaust (kW) | 14 |
| Radiated heat to ambient (kW)  | 2  |
| Heat rejection to coolant (kW) | 14 |

### AIR INTAKE

|                                 |       |
|---------------------------------|-------|
| Max. intake restriction (mm EC) | 200   |
| Intake air flow (L/s)           | 18.20 |



# T12KM

## ALTERNATOR CHARACTERISTICS

### GENERAL DATA

|   |                         |
|---|-------------------------|
| Alternator ref.   | AT00404T                |
| Number of Phase   | Single phase            |
| Power factor (Cos Phi)                                  | 1                       |
| Altitude (m)  | 0 to 1000               |
| Overspeed (rpm)   | 2250                    |
| Number of pole  | 4                       |
| Capacity for maintaining short circuit at 3 In for 10 s | Yes                     |
| Insulation class  | H                       |
| T° class, continuous 40°C                               | H / 125°K               |
| T° class, standby 27°C                                  | H / 163°K               |
| AVR Regulation  | Yes                     |
| Total Harmonic Distortion in no-load DHT (%)            | 2                       |
| Total Harmonic Distortion, on load DHT (%)              | 3.6                     |
| Wave form : NEMA=TIF                                    | <45                     |
| Wave form : CEI=FHT                                     | <2                      |
| Number of bearing                                       | 1                       |
| Coupling  | Direct                  |
| Voltage regulation at established rating (+/- %)        | +/- 1%                  |
| Recovery time (Delta U = 20% transient) (ms)            | 500                     |
| Indication of protection                                | IP 23                   |
| Technology  | Without collar or brush |

### OTHER DATA

|   |        |
|---|--------|
| Continuous Nominal Rating 40°C (kVA)                    | 13     |
| Standby Rating 27°C (kVA)                               | 14.80  |
| Efficiencies 100% of load (%)                           | 81.40  |
| Air flow (m3/s)   | 0.0530 |
| Short circuit ratio (Kcc)                               | 0.62   |
| Direct axis synchro reactance unsaturated (Xd) (%)      | 180    |
| Quadra axis synchro reactance unsaturated (Xq) (%)      | 78     |
| Open circuit time constant (T'do) (ms)                  | 850    |
| Direct axis transient reactance saturated (X'd) (%)     | 16.80  |
| Short circuit transient time constant (T'd) (ms)        | 44     |
| Direct axis subtransient reactance saturated (X''d) (%) | 9.60   |
| Subtransient time constant (T''d) (ms)                  | 14     |
| Quadra axis subtransient reactance saturated (X''q) (%) | 22     |
| Subtransient time constant (T''q) (ms)                  |        |
| Zero sequence reactance unsaturated (Xo) (%)            | 3.30   |
| Negative sequence reactance saturated (X2) (%)          | 14.40  |
| Armature time constant (Ta) (ms)                        | 12     |
| No load excitation current (io) (A)                     | 0.50   |
| Full load excitation current (ic) (A)                   | 1.50   |
| Full load excitation voltage (uc) (V)                   | 15     |
| Engine start (Delta U = 20% perm. or 50% trans.) (kVA)  | 50     |
| Transient dip (4/4 load) - PF : 0,8 AR (%)              | 15.50  |
| No load losses (W)                                      | 506.05 |
| Heat rejection (W)                                      | 2307   |
| Unbalanced load acceptance ratio (%)                    |        |

## DIMENSIONS

### Containment DW

|                                       |         |
|---------------------------------------|---------|
| Commercial reference of the enclosure | M126 DW |
| Length (mm)                           | 1797    |
| Width (mm)                            | 775     |
| Height (mm)                           | 1391    |
| Dry weight (kg)                       | 668     |
| Tank capacity (L)                     | 93      |
| Acoustic pressure level @1m in dB(A)  | 71      |
| Sound power level guaranteed (Lwa)    | 88      |
| Acoustic pressure level @7m in dB(A)  | 59      |

### APM303, comprehensive and simple



The APM303 is a versatile unit which can be operated in manual or automatic mode. Equipped with an LCD screen, the user-friendly APM303 offers high-quality basic functions to guarantee simple, reliable operation and supervision of your generating set. It offers the following features:

**Measurements:**

phase-to-neutral and phase-to-phase voltages, active power currents, effective power, power factors, Kw/h energy meter Fuel, oil pressure and coolant temperature levels

**Supervision:**

Modbus RTU communication on RS485

**Reports:**

2 configurable reports

**Safety features:**

Overspeed, oil pressure

Coolant temperatures

Minimum and maximum voltage

Minimum and maximum frequency

Maximum current

Maximum active power

Phase sequence

**Traceability:**

Stack of 12 stored events

For further information, please refer to the data sheet for the APM303.

### TELYS, ergonomic and user-friendly



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.

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