T12K

Engine ref.	S3L2-SD
Alternator ref.	AT00350T
Performance class	G1

GENERAL CHARACTERISTICS

Frequency (Hz)	50
Voltage (V)	400/230
Standard Control Panel	APM303
Optional control panel	TELYS

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
220 TRI	9.2	11.5	8.4	10.5	30
220/127	7.6	9.5	6.9	8.6	25
415/240	9.2	11.5	8.4	10.5	16
400/230	9.2	11.5	8.4	10.5	17
380/220	9.2	11.5	8.4	10.5	17
200/115	9.2	11.5	8.4	10.5	33
240 TRI	9.2	11.5	8.4	10.5	28
230 TRI	9.2	11.5	8.4	10.5	29

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

DIMENSIONS COMPACT VERSION

Length (mm)	1405
Width (mm)	715
Height (mm)	1053
Dry weight (kg)	387
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)	530
Tank capacity (L)	50
Acoustic pressure level @1m in dB(A)	71
Sound power level guaranteed (Lwa)	87

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 Intlet 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 UNCERTAINLY

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 appropriated preventive measures.

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ENGINE CHARACTERISTICS

GENERAL ENGINE DATA

Engine model	MITSUBISHI
Engine ref.	S3L2-SD
Air inlet	Athmo
Cylinders arrangement	L
Number of cylinders	3
Displacement (C.I.)	1.32
Air coolant	
Bore (mm) x Stroke (mm)	78.00 x 92.00
Compression ratio	22 : 1
Speed (RPM)	1500
Pistons speed (m/s)	4.60
Maximum stand-by power at rated RPM (kW)	11.2
Frequency regulation (%)	+/- 2.5%
BMEP (bar)	6.13
Governor type	Mechanical

COOLING SYSTEM

Radiator & Engine capacity (L)	4.20
Max water temperature (°C)	111
Outlet water temperature (°C)	93
Fan power (kW)	0.40
Fan air flow w/o restriction (m3/s)	0.50
Available restriction on air flow (mm Water Column)	10.0
Type of coolant	Glycol-Ethylene
Thermostat (°C)	82-95

EMISSIONS

Emission PM (mg/Nm3)	80
Emission CO (mg/Nm3)	140
Emission HCNOx (g/kWh)	
Emission HC (mg/Nm3)	50

EXHAUST

Exhaust gas temperature (°C)	400
Exhaust gas flow (L/s)	36.50
Max. exhaust back pressure (mm EC)	700

FUEL

Consumption @ 110% load (L/h)	
Consumption @ 100% load (L/h)	3.10
Consumption @ 75% load (L/h)	2.50
Consumption @ 50% load (L/h)	2.10
Maximum fuel pump flow (L/h)	18.00

OIL

Oil capacity (L)	4.20
Min. oil pressure (bar)	0.50
Max. oil pressure (bar)	4.00
Oil consumption 100% load (L/h)	0.018
Carter oil capacity (L)	3.7

HEAT BALANCE

Heat rejection to exhaust (kW)	10
Radiated heat to ambiant (kW)	1.00
Haet rejection to coolant (kW)	9.8

AIR INTAKE

Max. intake restriction (mm EC)	200
Intake air flow (L/s)	13.60

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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator ref.	AT00350T
Number of Phase	Three phase
Power factor (Cos Phi)	0.8
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 (%)	2.6
Total Harmonic Distortion, on load DHT (%)	2.3
Wave form : NEMA=TIF	<45
Wave form : CEI=FHT	<2
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	
Recovery time (Delta U = 20% transcient) (ms)	
Indication of protection	IP 23
Technology	Without collar or brush

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	11
Standby Rating 27°C (kVA)	12.00
Efficiencies 100% of load (%)	85.9
Air flow (m3/s)	0.055
Short circuit ratio (Kcc)	0.900
Direct axis synchro reactance unsaturated (Xd) (%)	215
Quadra axis synchro reactance unsaturated (Xq) (%)	68
Open circuit time constant (T'do) (ms)	
Direct axis transcient reactance saturated (X'd) (%)	21.5
Short circuit transcient time constant (T'd) (ms)	36
Direct axis subtranscient reactance saturated (X"d) (%)	15.2
Subtranscient time constant (T"d) (ms)	13
Quadra axis subtranscient reactance saturated (X"q) (%)	79.90
Subtranscient time constant (T"q) (ms)	
Zero sequence reactance unsaturated (Xo) (%)	6.00
Negative sequence reactance saturated (X2) (%)	18.30
Armature time constant (Ta) (ms)	46
No load excitation current (io) (A)	0.34
Full load excitation current (ic) (A)	1.46
Full load excitation voltage (uc) (V)	
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	
Transcient dip (4/4 load) - PF : 0,8 AR (%)	
No load losses (W)	
Heat rejection (W)	1444.00
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)	615
Tank capacity (L)	93
Acoustic pressure level @1m in dB(A)	71
Sound power level guaranteed (Lwa)	87

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CONTROL PANEL

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.