



T22K

Engine ref.	S4Q2-SD
Alternator ref.	AT00404T
Performance class	G2

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	17.6	22	16	20	58
220/127	16	20	14.5	18.2	52
415/240	17.6	22	16	20	31
400/230	17.6	22	16	20	32
380/220	17.6	22	16	20	33
200/115	17.6	22	16	20	64
240 TRI	17.6	22	16	20	53
230 TRI	17.6	22	16	20	55

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 appropriated preventive measures.

DIMENSIONS COMPACT VERSION

Length (mm)	1700
Width (mm)	896
Height (mm)	1121
Dry weight (kg)	549
Tank capacity (L)	100

DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	M127
Length (mm)	2080
Width (mm)	960
Height (mm)	1415
Dry weight (kg)	780
Tank capacity (L)	100
Acoustic pressure level @1m in dB(A)	70
Sound power level guaranteed (Lwa)	87



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ENGINE CHARACTERISTICS

GENERAL ENGINE DATA

Engine model	MITSUBISHI
Engine ref.	S4Q2-SD
Air inlet	Athmo
Cylinders arrangement	L
Number of cylinders	4
Displacement (C.I.)	2.51
Air coolant	
Bore (mm) x Stroke (mm)	88.00 x 103.00
Compression ratio	22 : 1
Speed (RPM)	1500
Pistons speed (m/s)	5.15
Maximum stand-by power at rated RPM (kW)	22.6
Frequency regulation (%)	+/- 2.5%
BMEP (bar)	6.61
Governor type	Mechanical

COOLING SYSTEM

Radiator & Engine capacity (L)	8.10
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)	10.0
Type of coolant	Glycol-Ethylene
Thermostat (°C)	76.5-90

EMISSIONS

Emission PM (mg/Nm3)	120
Emission CO (mg/Nm3)	290
Emission HCNOx (g/kWh)	
Emission HC (mg/Nm3)	30

EXHAUST

Exhaust gas temperature (°C)	600
Exhaust gas flow (L/s)	74.00
Max. exhaust back pressure (mm EC)	680

FUEL

Consumption @ 110% load (L/h)	6.80
Consumption @ 100% load (L/h)	6.20
Consumption @ 75% load (L/h)	4.70
Consumption @ 50% load (L/h)	3.40
Maximum fuel pump flow (L/h)	36.00

OIL

Oil capacity (L)	6.50
Min. oil pressure (bar)	1.00
Max. oil pressure (bar)	5.00
Oil consumption 100% load (L/h)	0.060
Carter oil capacity (L)	5.5

HEAT BALANCE

Heat rejection to exhaust (kW)	21
Radiated heat to ambient (kW)	3.00
Heat rejection to coolant (kW)	19

AIR INTAKE

Max. intake restriction (mm EC)	200
Intake air flow (L/s)	29.00



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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator ref.	AT00404T
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
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 (+/- %)	
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)	20
Standby Rating 27°C (kVA)	21.50
Efficiencies 100% of load (%)	87.4
Air flow (m3/s)	0.053
Short circuit ratio (Kcc)	0.620
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) (%)	16.8
Short circuit transient time constant (T'd) (ms)	44
Direct axis subtransient reactance saturated (X''d) (%)	9.6
Subtransient time constant (T''d) (ms)	14
Quadra axis subtransient reactance saturated (X''q) (%)	22.00
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)	2307.00
Unbalanced load acceptance ratio (%)	

DIMENSIONS

Containment DW

Commercial reference of the enclosure	M127 DW
Length (mm)	2160
Width (mm)	966
Height (mm)	1582
Dry weight (kg)	970
Tank capacity (L)	230
Acoustic pressure level @1m in dB(A)	70
Sound power level guaranteed (Lwa)	87

APM303, comprehensive and simple**TELYS, ergonomic and user-friendly**

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.

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.

