

TM20 SINGLE PHASE MITSUBISHI ENGINE

DIESEL GENSET

MODEL	TM20 Single Phase
Stand-by Power @ 60Hz	20kW / 20 kVA
Prime Power @ 60Hz	18 kW / 18 kVA

Standard Features

General features :

- Engine (MITSUBISHI , S4Q2.Y262SD)
- Engine EPA Carb Charge alternator 12 V ,
- Governor:Meca/Mechanical
- Alternator (MECC ALTE , ECO28VL)
- Single bearing alternator IP 23 , insulation class H /H
- Radiator 50°C [122°F]°C max. T° air inlet with coolant cap
- Skid and vibration isolators
- Dry type air filter
- Main line circuit breaker
- Microprocessor control panel
- 12 V battery, rack and cable
- Industrial silencer (loose)
- User manual ^pCSA Certified (consult us)



Generator Ratings

Voltage	HZ	Phase	P.F	Standby Amps	Standby Ratings kW/kVA	Prime Ratings kW/kVA
240MONO	60	1	1	83	20 / 20	18 / 18

Stand-By ratings are available for the duration of any power outage. No overload capacity is specified at this ratings. Prime ratings are available per BS 5514, DIN 6271, ISO-3046 and IEC 34-1 with 10% overload capacity one hour in twelve hours.

Conditions of sale

We provide a full line of products with high quality recognized engines and alternators. Service and parts are available from our distributors as a single source of responsibility.

Each and every unit is factory tested. All generator sets are also prototype tested. Two years limited warranty , please refer to the conditions terms . Five years extended are also available.

MANUFACTURED BY:



MIAMI FLORIDA USA
 PH: (786)-357-2944
 FAX: (305)-228-0772
 fullpowerpro@aol.com

ENGINE DATA

Manufacturer / Model	MITSUBISHI S4Q2.Y262SD , 4-cycle, Athmo , N/A
Cylinder Arrangement	4 X L
Displacement	2.50L [152.6C.I.]
Bore and Stroke	88mm [3.5in.] X 103mm [4.1in.]
Compression ratio	22 : 1
Rated RPM	1800 Rpm
Piston Speed	6.18m/s [20.3ft./s]
Max. stand by Power at rated RPM	28.71kW [38BHP]
Frequency regulation, steady state	+/- 2. 5%
BMEP	6.94bar [101psi]
Governor : type	Meca/Mechanical

Exhaust System

Exhaust gas flow	89L/s [189cfm]
Exhaust temperature	600°C [1112°F]
Max back pressure	680mm CE [27in. WG]

Fuel System

110% (Stand By power)	8.1L/h [2.1gal/hr]
100% (of the Prime Power)	7.4L/h [2.0gal/hr]
75% (of the Prime Power)	5.6L/h [1.5gal/hr]
50% (of the Prime Power)	4.1L/h [1.1gal/hr]
Total fuel 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	0.08L/h [0.0gal/hr]
Oil capacity carter	5.5L [1.5gal]

Thermal balance 100% load

Heat rejection to exhaust	25kW [1422Btu/mn]
Radiated heat to ambient	3kW [171Btu/mn]
Heat rejection to coolant	23kW [1308Btu/mn]

Air intake

Max. intake restriction	200mm CE [8in. WG]
Engine air flow	34L/s [72cfm]

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	1.2 kW
Fan air flow	1m3/s [2119cfm]
Available restriction on air flow	10mm CE [0.4in. WG]
Type of cool	Gool
Thermostat	76.5-90 °C

Emissions

HC	N/A
CO	N/A
Nox	N/A
PM	N/A

ALTERNATOR SPECIFICATIONS

GENERAL DATA

Compliance with NEMA MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards.

Vacuum-impregnated windings with epoxy varnish.
 IP21 drip proof.

ALTERNATOR DATA

	MECC ALTE	ECO28VL
Manufacturer / Type		
Number of phase		3
Power factor (Cos Phi)		0.8
Altitude		1000
Overspeed		rpm
Pole : number		4
Exciter type		No
Insulation : class, temperature rise		H / H
Voltage regulator		SR7/2
Sustained short circuit current		
Total harmonics (TGH/THC)		
Wave form : NEMA = TIF – TGH/THC		
Wave form : CEI = FHT – TGH/THC		
Bearing : number		1
Coupling		Direct
Voltage regulation 0 to 100% load		
Recovery time (20% Volt dip) ms		ms
SkVA with 90 % of nominal sustained voltage (at 0.4 PF)		N/A

OTHER ALTERNATOR DATA

Continuous nominal rating @ 40°C	36 kVA
Standby rating @ 27°C	36.3 kVA
Efficiencies @ 4/4 load	86.5 %
Air flow	5.8m3/s [12289.45cfm]
Short circuit ratio;50 (Kcc)	0.62
Direct axis synchro reactance unsaturated (Xd)	165 %
Quadra axis synchro reactance unsaturated (Xq)	71 %
Open circuit time constant;50 (T'do)	0.93 ms
Direct axis transient reactance saturated (X'd)	15.4 %
Short circuit transient time constant (T'd)	46 ms
Direct axis subtransient reactance saturated (X''d)	8.8 %
Subtransient time constant (T''d)	12 ms
Quadra axis subtransient reactance saturated (X''q)	19 %
Zero sequence reactance unsaturated (Xo)	2.8 %
Negative sequence reactance saturated (X2)	13.2 %
Armature time constant (Ta)	11 ms
No load excitation current (io)	A
Full load excitation current (ic)	A
Full load excitation voltage (uc)	V
Recovery time (Delta U = 20% transitoire)	ms
Motor start (Delta = 20% perm. Or 50% trans.)	kVA
Transient dip (4/4 charge) – PF : 1.8 AR	%
No load losses	kW
Heat rejection	kW

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Control Panels

NEXYS



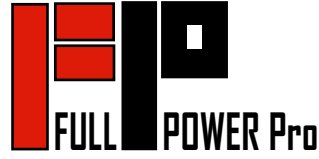
Specifications :Frequency meter, Ammeter, Voltmeter
Alarms and faults Oil pressure, water temperature, Overcrank,
Overspeed, Min/max alternator, Low fuel level, Emergency stop Engine
parameters Hours counter, Engine speed, Battery voltage, Fuel level, Air
preheating

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

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Options

Engine and Radiator

Heat shield protection
Oil drain extension
Heavy duty air filter

Lube oil drain pump
Radiator core guard
Battery charger
Block heater

Alternator

Anti condensation heater
Enforced impregnation
Oversized alternator

Control panel

NFPA 110 level 1
Paralleling system
Remote annunciator
Oil temperature shutdown

Key start panel

Literature

Parts
Maintenance

Exhaust

Residential silencer
Critical silencer
Flexible exhaust conn.

Fuel

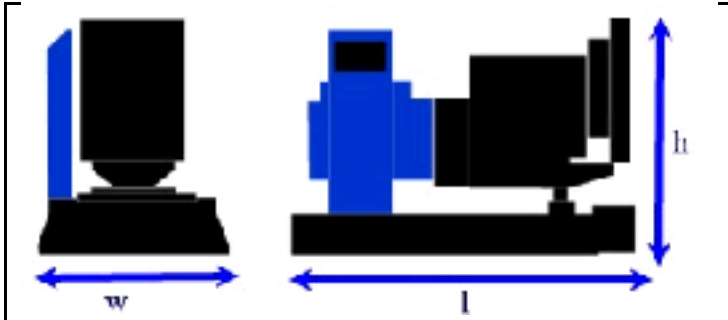
Day tank
Subbase fuel tanks UL
Water separator fuel filter

Enclosure M107

Silent 67 db @ 23 Ft (stby)

Weight and Dimensions

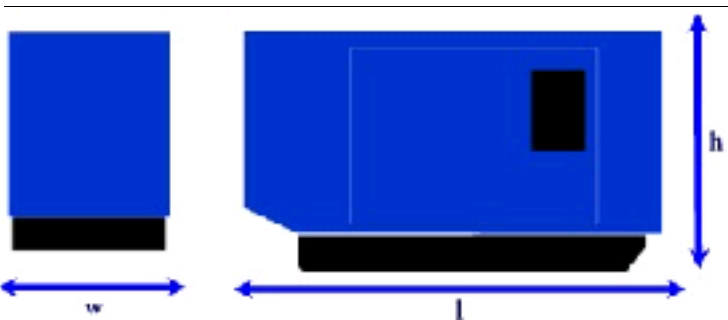
Open Model



Overall size l x w x h :
1400mm [55in] x 780mm [31in] x 1055mm [42in]

Weight :
500kg [1102lbs] Net 600kg [1322lbs] Brut

With Optional Enclosure



Overall size l x w x h :
2100mm [83in] x 920mm [36in] x 1445mm [57in]

Weight :
905kg [1995lbs] Net 1005kg [2215lbs] Brut