



TM20K

DIESEL GENSET

MODEL	TM20K
Stand-by Power @ 50Hz	18kW / 22 kVA
Prime Power @ 50Hz	16 kW / 20 kVA

Standard Features

General features :

- Engine (MITSUBISHI , S4Q2.SD)
- Charge alternator 12 V , Governor:Meca/Mechanical
- Alternator (MECC ALTE , ECO 28 1L/4)
- 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



Generator Ratings

Voltage	HZ	Phase	P.F	Standby Amps	Standby Ratings kW/kVA	Prime Ratings kW/kVA
415/240	50	3	0.8	31	18 / 22	16 / 20
400/230	50	3	0.8	32	18 / 22	16 / 20
380/220	50	3	0.8	33	18 / 22	16 / 20
240/120	50	3	0.8	53	18 / 22	16 / 20
230/115	50	3	0.8	55	18 / 22	16 / 20
220/110	50	3	0.8	58	18 / 22	16 / 20
220/127	50	3	0.8	52	16 / 20	14 / 18
200/115	50	3	0.8	64	18 / 22	16 / 20

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

- SDMO provides a full line of products with high quality recognized engines and alternators.
- Service and parts are available from SDMO distributors as a single source of responsibility.
- Each and every units 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.





ENGINE DATA

Manufacturer / Model	MITSUBISHI S4Q2.SD , 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	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/Mechanical

Exhaust System

Exhaust gas flow	74L/s [157cfm]
Exhaust temperature	600°C [1112°F]
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]
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	0.06L/h [0.0gal/hr]
Oil capacity carter	5.5L [1.5gal]

Thermal balance 100% load

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	0.8m3/s [1695cfm]
Available restriction on air flow	10mm CE [0.4in. WG]
Type of coolant	Gencool
Thermostat	76.5-90 °C

Emissions

HC	30 mg/Nm3
CO	290 mg/Nm3
Nox	1020 mg/Nm3
PM	120 mg/Nm3





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 ECO 28 1L/4
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	AVR
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	kVA
Standby rating @ 27°C	24.2 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)	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





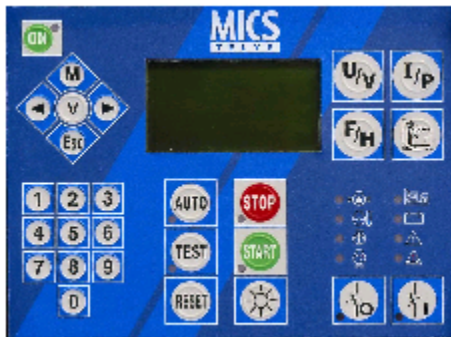
Control Panels

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

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

Exhaust

- Residential silencer
- Critical silencer
- Flexible exhaust conn.

Literature

- Parts
- Maintenance

Fuel

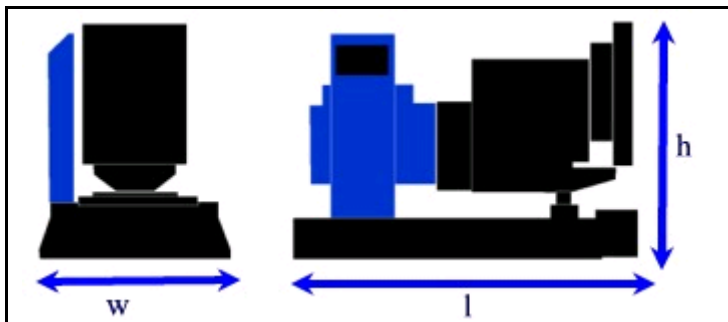
- Day tank
- Subbase fuel tanks UL
- Water separator fuel filter

Enclosure M107

- Silent 61 db @ 23 Ft (stby)

Weight and Dimensions

Open Model



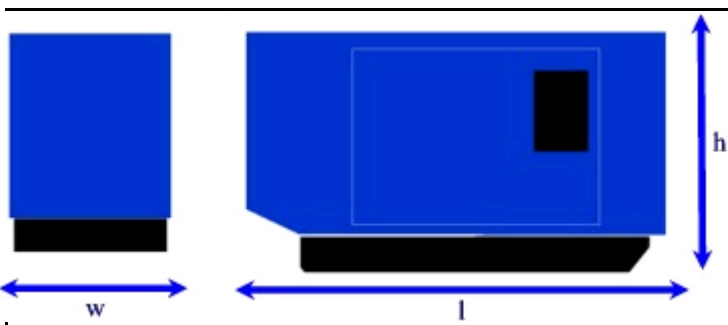
Overall size l x w x h :

1425mm [56in] x 780mm [31in] x 1055mm [42in]

Weight :

530kg [1168lbs] Net 630kg [1389lbs] Brut

With Optional Enclosure



Overall size l x w x h :

2100mm [83in] x 920mm [36in] x 1445mm [57in]

Weight :

845kg [1862lbs] Net 945kg [2083lbs] Brut



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