



Millennium Power Manufacturing Corp.

<http://www.mpmc-china.com>

MCS20-2 (404D-22G)

Generating set Technical Data Sheet



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ISO9001:2000
MPMC GENERATING SETS



STANDARD SPECIFICATION

General features:

- Composed of Perkins(UK) diesel engine and Stamford or MPMC alternator
- 12V DC start motor and storage battery
- Brushless, Self-excited, IP23, insulation class H alternator
- Engine cooling system: water-cooled
- Key start panel control system as standard, digital auto-start panel is optional
- 8-hour operation base tank
- Optional open type or silent type
- All generating sets are gone through rigorous testing before being released to the market place, including 50% load, 75% load, 100% load , 110% load and all protection function (overspeed stop, high water temperature, low oil pressure, battery charging fail, emergency stop)



Genset Main Technical Data

3-PH, 60Hz@1800RPM, 480/277V (Also Can Be Made According To Customers' Special Requirements)

| Genset Model | Genset Specification | | | | | Engine Specification | | | | Alternator Model |
|--------------|----------------------|-----|------------------|-----------|----------|----------------------|------|------|------|------------------|
| | kW | | Cons. 100% (L/H) | dB(A) @7m | Tank (L) | Model | Cyl. | Gov. | Asp. | |
| | ESP | PRP | | | | | | | | |
| MPS20-2 | 20 | 18 | 5.8 | N/A | 80 | 404D-22G | 4 | M | NA | BCI 184E |
| MPS20S-2 | 20 | 18 | 5.8 | 70 | 105 | 404D-22G | 4 | M | NA | BCI 184E |
| MPM20-2 | 20 | 18 | 5.8 | N/A | 80 | 404D-22G | 4 | M | NA | MPA 184E |
| MPM20S-2 | 20 | 18 | 5.8 | 70 | 105 | 404D-22G | 4 | M | NA | MPA 184E |

- 1) Available in various voltages
- 2) To show MPMC Generating Sets Model
For example: MCM38-1A, it is the open generation set.
MCM38S-1A, it is the silent generating set.
- 3) ESP=Standby power standby duty, operation under variable load, without overload.
PRP=Prime power continuous duty operation, under variable load, 10% overload permissible 1/12hr.
- 4) E=Electronic speed governor;
M=Mechanical speed governor
- 5) Asp=Aspiration;
NA=Naturally Asp;
TC=Turbocharged;
TW=Turbocharged water-cooled;
TCA= Turbocharged air-air cooled
- 6) Technical data is subject to work test conditions

Reliable Performance

Voltage regulation

Voltage regulation maintained within $\pm 0.5\%$ as follow:

- Power factor Between 0.8~1.0 lag
- From no load to full load, any steady load
- Speed droop variation under 4.5%

Frequency/Speed undulation

- Change load from 0-100%, Frequency/Speed Droop Ratio within 5%.
- Load from 25-100%, any steady load Frequency/Speed undulation within 0.25%

Effect factor of telecom

- TIF(MA MG1-22) better than 50
- THF(BS EN60034) better than 2%

Criterion

- ISO8528, GB/T2820
- EN12601:2001, EN60034-22:1997, EN60204-1:2006
- ISO9001:2000 Quality Control System

Dimension and Weight



Open Type

Overall size (L*W*H)
1450×650×1200

Weight: 450kg



Silent Type

Overall size (L*W*H)
2155x1000x1275

Weight: 890kg

ENGINE SPECIFICATION

Perkins (UK) Diesel Engine

Technical Data

| | |
|---------------------------------------|--|
| Engine Model | 403D-22G |
| Emissions statement | EU2007 (EU 97/68/EC Stage II) EPA Tier 4Final (EPA 40 CFR Part 1039 Tier 4) |
| Number of Cylinders | 4 |
| Cylinder arrangement | Vertical in-line |
| Cycle | 4 stroke |
| Aspiration | Natural Aspiration |
| Bore×Stroke (mm×mm) | 84 x 100 |
| Displacement (Liter) | 2.216 |
| Compression Ratio | 23.3:1 |
| Prime Power/Speed (kW/rpm) | 21.6/1800 |
| Standby Power/Speed (kW/rpm) | 23.9/1800 |
| Speed Governor | Mechanical |
| Cooling System | Water-cooled |
| Speed Stability (%) | ≤5% |
| Total lubrication system capacity (L) | 10.6 |
| Coolant capacity (inc. radiator) (L) | 7.0 |
| Fuel Consumption at 100% Load (g/kWh) | 245(at 1800RPM) |
| Starter Motor | 2 kW, 12 V |
| Alternator | 65 amp, 12 V |

Alternator SPECIFICATION

Stamford Alternator (Standard)

MPMC Alternator (Option)

Technical Data

| | |
|--------------------------|--|
| Alternator Model | BCI XXXX (Stamford) MPA XXXX(MPMC) Please Refer To The “ Genset Main Technical Data” |
| Exciter type | Brushless, Self-excited |
| Power factor | 0.8 |
| Voltage Adjust range | ≥5% |
| Voltage Regulation NL-FL | ≤±0.5% |
| Insulation Grade | H |
| Protection Grade | IP23 |

Control System

1. Standard: MP170HC Key Start

Providing the standard functions as follows:

(Also can be made according to the customers' special requirements)

- * Start/Stop controller
- * Ampere meter
- * Voltmeter and selector switch
- * Frequency meter/ Water temperature gauge/ Oil pressure gauge/
Hour counter/ Battery voltage meter
- * Emergency stop pushbutton
- * Alarm System: Over speed、High Engine Temperature
Low Oil Pressure、Charge Fail
- * Protection System: Over speed、High Engine Temperature、Low Oil
Pressure、Emergency Stop. And the other protection function
pre-setting

2. Option: Smartgen HGM6110 Digital Auto Start

3. Option: Smartgen HGM6120 Digital Auto Start (Option assembled with the ATS)

4. Option: Deep Sea DSE5210 Digital Auto Start

5. Option: Deep Sea DSE5220 Digital Auto Start (Option assembled with the ATS)

Digital Auto-start Generator controller integrating digital, intelligent and network techniques is used for automatic control system of diesel generator. It can carry out functions including automatic start/stop, data measure and alarming. Optionally assembled with the ATS, it can carry out auto-switching between the outer power and generating set power. (AMF)

Functions:

- * Automatic Start/Stop
- * 3 start attempts failure and Automatic Crank Disconnect
- * Parameters display (V/A/Hz/Hour)
- * Engine monitoring and protection
- * Charge alternator exciting and Charge alternator fail alarm
- * Running hour counting
- * Settings can be adjustable via key buttons on front panel

6. option: BGC-L

(Main used in Multiple gen-sets, load sharing)



(1)



(2)



(3)



(4)



(5)



(6)