



**Millennium Power Manufacturing Corp.**  
*<http://www.mpmc-china.com>*

**MMTS650-2(12V2000G45)**  
**Generating set Technical Data Sheet**



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**ISO9001:2000**  
MPMC GENERATING SETS



## STANDARD SPECIFICATION

### General features:

- Composed of MTU(china) diesel engine and Stamford or MPA alternator
- 24V 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
- 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 |                  |           |          |                      |      |      |      |                  |
| MMTS650-2    | 650                  | 591 | 148              | N/A       | N/A      | 12V2000G45           | 12   | ECU  | TCA  | HCI 544E         |
| MMTS650S-2   | 650                  | 591 | 148              | 75        | N/A      | 12V2000G45           | 12   | ECU  | TCA  | HCI 544E         |
| MMTM650-2    | 650                  | 591 | 148              | N/A       | N/A      | 12V2000G45           | 12   | ECU  | TCA  | MPA 354D         |
| MMTM650S-2   | 650                  | 591 | 148              | 75        | N/A      | 12V2000G45           | 12   | ECU  | TCA  | MPA 354D         |

- 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  
ECU=Electric control unit governor
- 5) Asp=Aspiration;  
NA=Naturally Asp;  
TC=Turbocharged;  
TW=Turbocharged after water-cooled;  
TCA= Turbocharged and 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)

4000×1690×2100

**Weight: 4900kg**



### Silent Type

Overall size (L\*W\*H)

6060×2438×2595

**Weight: 6200kg**

## ENGINE SPECIFICATION

### Cummins Diesel Engine

#### Technical Data

|                                       |                                    |
|---------------------------------------|------------------------------------|
| Engine Model                          | 12V2000G45                         |
| Number of Cylinders                   | 12                                 |
| Cylinder arrangement                  | Vee form                           |
| Cycle                                 | Four stroke                        |
| Aspiration                            | Turbocharged and Air to Air Cooled |
| Bore×Stroke (mm×mm)                   | 130 x 150                          |
| Displacement (Liter)                  | 23.88                              |
| Compression Ratio                     | 16:1                               |
| Prime Power/Speed (kW/rpm)            | 710/1800                           |
| Standby Power/Speed (kW/rpm)          | 781/1800                           |
| Speed Governor                        | Electric control unit              |
| Cooling System                        | Water-cooled                       |
| Speed Stability (%)                   | ≤5%                                |
| Total lubrication system capacity (L) | 77                                 |
| Coolant capacity (L)                  | 164                                |
| Fuel Consumption at 100% Load (L/hr)  | 203(at 1800rpm)                    |
| Starter Motor                         | 24 V                               |
| Alternator                            | 24 V                               |

## Alternator SPECIFICATION

### Stamford Alternator (Standard)

### MPMC Alternator (Option)

#### Technical Data

|                          |  |
|--------------------------|--|
| Alternator Model         | HCI XXXX (Stamford)<br>MPA XXXX(MPMC)<br>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)