

# Diesel Generator Set: MCS120S-2

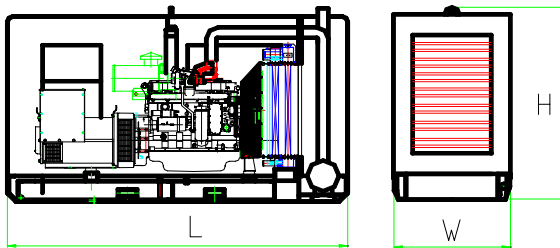
## General Features

- Every generator set is subjected to a comprehensive test program which includes 50% load, 75% load, 100% load, 110% load and the checking and proving of all control and safety shut-down functions.
- Equipped with battery charger and 24V high performance maintenance-free lead-acid starting batteries and connecting with cables.
- Equipped with industrial silencer and flexible exhaust hose.
- Equipped with 8-hours operation base tank;
- Equipped with CHINT MCCB circuit breaker;
- Designed to Comply with ISO8528/GB2820;
- Powered by Cummins engine and coupled with Stamford alternator.



## Benefits

- Function stability credibility, service convenience;
- Low operating cost results in optional economy;
- Gets the job done wherever you are;
- Ease of installation, operation and maintenance.



## Dimension and Weight

|                 |    |      |
|-----------------|----|------|
| ● Length(L)     | mm | 3200 |
| ● Width(W)      | mm | 1130 |
| ● Height(H)     | mm | 1700 |
| ● Weight        | kg | 1580 |
| ● Tank capacity | L  | 300  |

## Environment Condition

|                           |    |       |
|---------------------------|----|-------|
| ● Environment temperature | °C | ≤50   |
| ● Relative humidity       | %  | ≤90   |
| ● Altitude                | m  | ≤1000 |

## Genset Technical Data

|                               |               |
|-------------------------------|---------------|
| Standby power                 | 120 kW        |
| Prime power                   | 109 kW        |
| Rated speed                   | 1800 RPM      |
| Output frequency              | 60 Hz         |
| Phase                         | 3             |
| Noise dB(A) @7m               | 70            |
| Rated voltage                 | 480V          |
| Engine model                  | 6BTA5.9-G2    |
| Alternator model              | UCI 274D      |
| Fuel consumption of 100% load | 30.0 Litres/h |
| Fuel consumption of 75% load  | 22.6 Litres/h |
| Voltage regulation rate       | ≤ ±1%         |
| Random voltage variation      | ≤ ±1%         |
| Frequency regulation rate     | ≤ ±5%         |
| Random frequency variation    | ≤ ±0.5%       |

### Prime Power:

This rating is for the supply of continuous electrical power (at variable load). There is no limit on the annual hours of operation and 10% overload power can be supplied for 1 hour in 12.

### Standby power:

This rating is for the supply of continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted.

### Rated voltage:

Available with customer requirements.

## Engine Specifications

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Engine model                          | 6BTA5.9-G2                          |
| Engine manufacturer                   | Cummins                             |
| Number of cylinders                   | 6                                   |
| Cylinder arrangement                  | Vertical in-line                    |
| Cycle                                 | Four stroke                         |
| Aspiration                            | Turbocharged and After water-cooled |
| Bore×Stroke (mm×mm)                   | 102 x 120                           |
| Displacement (Liter)                  | 5.9                                 |
| Compression Ratio                     | 17.5:1                              |
| Prime power/speed (kW/RPM)            | 120/1800                            |
| Standby power/speed (kW/RPM)          | 132/1800                            |
| Speed governor                        | Electrical                          |
| Cooling system                        | Forced Water Cooling Cycle          |
| Steady speed droop (%)                | ≤1%                                 |
| Total lubrication system capacity (L) | 16.4                                |
| Coolant capacity (engine only) (L)    | 9.1                                 |
| Fuel consumption at 100% load (g/kWh) | 211 (at 1800RPM)                    |
| Starter motor                         | DC24V,                              |
| Alternator                            | AC24V                               |

## Alternator Specifications

|                          |   |
|--------------------------|---|
| Alternator model         | UCI 274D                                    |
| Alternator manufacturer  | Stamford                                    |
| Exciter type             | Single bearing, Brushless, Self-excited     |
| Rated output prime power | 117 kW                                      |
| Rated speed              | 1800 RPM                                    |
| Rated frequency          | 60 Hz                                       |
| Phase                    | 3   |
| Rated voltage            | 480 V(Available with customer requirements) |
| Power factor             | 0.8   |
| Voltage adjust range     | ≥5%   |
| Voltage regulation NL-FL | ≤±1%  |
| Insulation grade         | H   |
| Protection grade         | IP23  |

Remark

Alternator option:

Other alternator manufacturer: Lisite, Leroy Somer, Marathon and Mecc Alte.

## Control System DSE3110

All MPMC series genset have a control cubicle (the deepsea controller DSE3110 as standard) mounted on a isolated support, which has the following features:

- Electronic digital control module with monitoring/control facility and warning indicators;
- Automatic shutdown protection
- Emergency stop button (lock-down type)
- AC output circuit breaker with over-current protection;
- DC circuit control switch.

### *The control module gives digital readouts of:*

- Generator voltage;
- Output frequency;
- Engine speed;
- Battery voltage;
- Engine hours run.



DSE3110

Note:

1. The engine coolant temperature used temperature meter display;
2. The engine oil pressure used oil pressure meter display;
3. Generator current used current meter display and used change switch for each phase displayed separately

### *The control module has indicators for failure information:*

- Overspeed/underspeed,
- Emergency stop
- Low oil pressure;
- High water temperature
- Failure to start
- Battery charger failure

### *Automatic shutdown occurs under:*

- Low engine oil pressure;
- High engine water temperature;
- Overspeed/underspeed;
- Failure to start after three attempts.

### *The controller option:*



MP170-HC



HGM6120



DSE7110



DSE7120



DSE7510

Remark: the controller detail information please refer to the file “Control System Choice”

## Generator Set Options and Accessories

### Generator set

- Open generator set
- Trailer generator set
- ABB MCCB circuit breaker

### Fuel system

- 12 hour base tank(single wall)
- 24 hour base tank(single wall)
- Dual wall base fuel tank
- Outside fuel tank

### Exhaust system

- Residential exhaust silencer

### Alternator

- PMG excitation
- Space heater

### Low environment temperature

- Water heater
- Oil heater
- Battery heater

### Control system

- AMF function
- ATS control cabinet
- Multiple generator automatic synchronising

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MPMC reserves the right to implement specifications or design changes without notice.

**WARNING:** Do not connect generator to any building's electrical system unless a disconnect switch has been installed.

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