MPMC BEYOND ENERGY

# Model: MPL1500(S)-1

Powered by Perkins

## Applicable Standards

- ISO 8528-5:2018
- GB/T2820.5-2009
- CE
- ISO 3046
- ISO 12944 (*SC only)

| General Information | | | Rated Power | | | |
|---|---|---|---|---|---|---|
| Frequency | | Voltage | Prime Power | | Standby Power | |
| Hz | | V | kVA | kW | kVA | kW |
| 50Hz Rated | Rated | 415V/240V | 1500 | 1200 | 1650 | 1320 |
| | | 400V/230V | 1500 | 1200 | 1650 | 1320 |
| | | 380V/220V | 1500 | 1200 | 1650 | 1320 |
| | | 220V/110V | N/A | N/A | N/A | N/A |
| 60Hz | | 480V/277V | 1500 | 1200 | 1650 | 1320 |
| | | 440V/254V | 1500 | 1200 | 1650 | 1320 |
| | | 400V/230V | N/A | N/A | N/A | N/A |
| | | 380V/220V | N/A | N/A | N/A | N/A |
| | | 220V/127V | N/A | N/A | N/A | N/A |
| | | 220V/110V | N/A | N/A | N/A | N/A |
| Power Factor | | | 0.8 Lagging | | | |
| Engine | | | 4012-46TAG2A Switchable | | | |
| Rated Speed | | | 1500 RPM (Changeable) | | | |
| Fuel Type | | | Grade No. 2D per ASTM D975 | | | |
| Lube-oil Type | | | API Service CF Class SAE 15W-40 | | | |
| Alternator | | | LYG 454C | | | |

| Noise Level | | 50Hz | 60Hz |
|---|---|---|---|
| Average Value @1m,75%load | OE Series dB(A) | 112 | 112 |
| | SC Series dB(A) | TBA | TBA |

| Fuel Consumption | | 50Hz | 60Hz |
|---|---|---|---|
| Load Ration | L/h@110% | 341 | 344 |
| | L/h@100% | 310 | 315 |
| | L/h@75% | 234 | 246 |
| | L/h@50% | 157 | 169 |

| Dimension and Weight | OE Series Open-type | SC Series Silent-type |
|---|---|---|
| Length (L) mm | 4950 | 6058 |
| Width (W) mm | 2250 | 2438 |
| Height (H) mm | 2530 | 2896 |
| Net. Weight (kg) | 12750 | 16750 |

Note: Specifications and illustrations are subject to revision without notice.

## Environmental Conditions

- Ambient temperature: +5°C~+40°C (Rated Power)
- Maximal ambient temperature：50°C
- Altitude: ≤1000m
- Anti-dust, anti-corrosion and ultra-silent

*Remark: If your conditions are different from the above, please contact our sales.

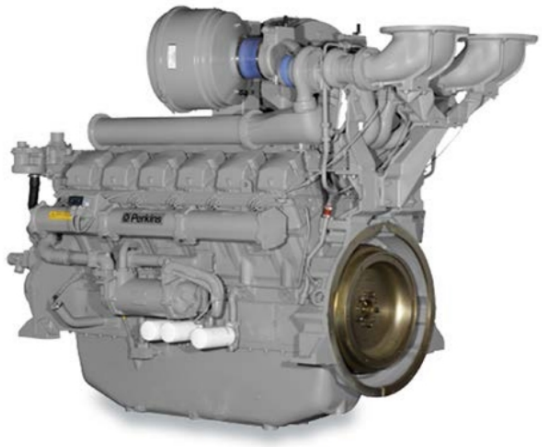
## Factory Inspection

- Complete design and quality inspection
- 0%, 25%, 50%, 75%, 100%, 110% load test
- IP test
- Noise test
- Function test
- Protection test

ISO9001:2015 Quality system certified
ISO14001 System certification
OHSAS18001 System certification
CE certificate

MPMC BEYOND ENERGY

# Engine Specifications



| Engine model | 4012-46TAG2A Switchable | |
|---|---|---|
| Emission | N/A | |
| Number of cylinders & Arrangement | 12 & 60° Vee | |
| Cycle | Four stroke | |
| Aspiration | Turbocharged | |
| Bore x Stroke | 160 x 190 mm | |
| Displacement | 45.842 L | |
| Compression ratio | 13 ： 1 | |
| Gross prime power /speed | 1331 kWm/1500 rpm | 1331 kWm/1800 rpm |
| Gross standby power /speed | 1459 kWm/1500 rpm | 1459 kWm/1800 rpm |
| Speed governor | Electric | |
| Cooling system | Forced water cooling cycle with belt fan | |
| Steady State Stability Band at any Constant Load | ≤±0.25% | |
| Total lubrication system capacity | 153 L | |
| Coolant capacity (engine only) | 73 L | |
| Starter motor & Charge alternator | DC 24V | DC 24V 40Amps |
| Fuel available | Grade No. 2D per ASTM D975 | |
| | HVO(EN 15940) | |

☑Industrial silencer / ☐Residential silencer / ☐Critical silencer

☐Spark arrestor

☐Heavy duty air filter / ☑Single-core air filter

☑-18℃ start up battery / ☐-45℃ start up battery

☑Anti-vibration mount

☑Flexible fuel connection hoses

☐Water-fuel separator / ☑ Multi-water-fuel separators

☐Jacket water heater / ☐ Fuel jacket water heater

☐Coolant level sensor

☑Coolant temperature sensor

☑Lube-oil pressure sensor

☐Lube-oil temperature sensor

☐Lube-oil auto refilling meter

☐Lube-oil auto refilling tank

☐Smoke temperature sensor

☐Lube-oil manual pump

☑Replaceable fuel filter, oil filter

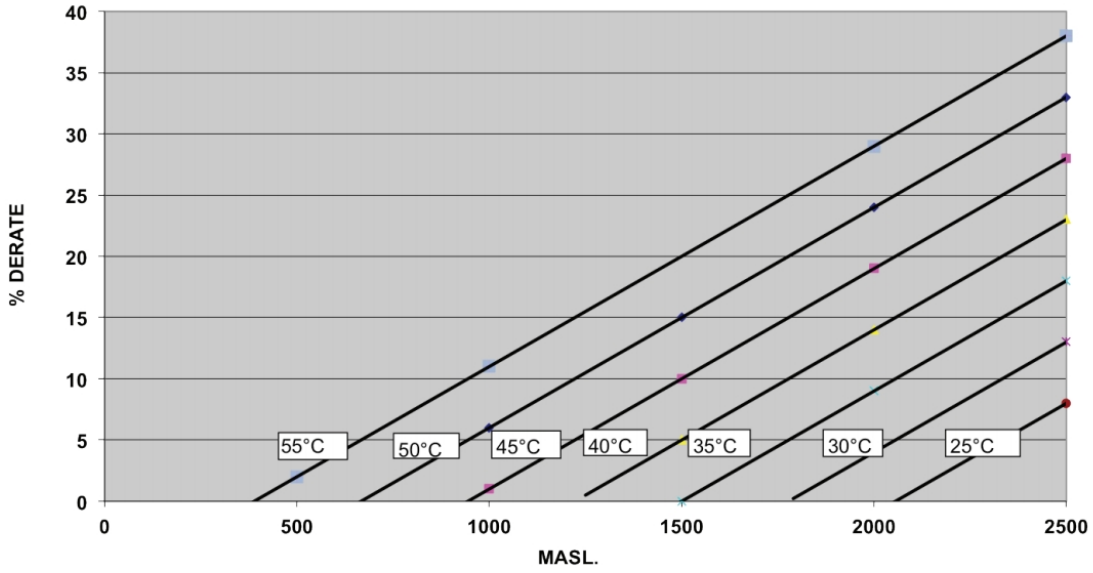
☐Breath box

# Engine Derating Curves

## 50Hz/1500RPM

### 4012-46TAG2A @ 1500 rpm

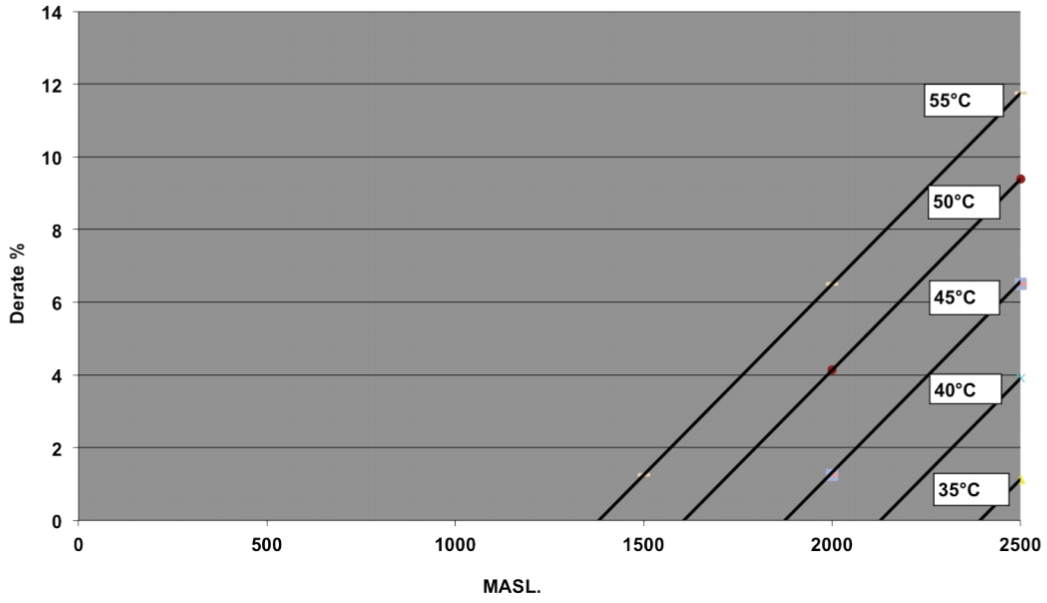
4012-46TAG2A (Switchable) 1500 rpm Non-Ems. Derate for high intake temperature. And/Or elevated altitude from ISO 3046 standard conditions.




## 60Hz/1800RPM

### 4012-46TAG2A @ 1800 rpm

4012-46TAG2A (Switchable) 1800 rpm. Non-Ems. Derate for high intake temperature. And/Or elevated altitude from ISO 3046 standard conditions.



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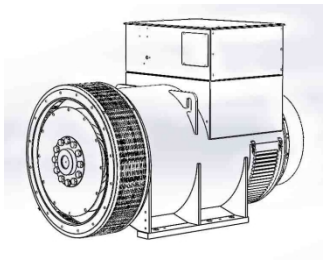
# Alternator Specifications



| Alternator model | LYG454C-V01 |
|---|---|
| Number of phase | 3 |
| Power factor (Cos Phi) | 0.8 |
| Poles | 4 |
| Winding leads | 6 |
| Insulation level | H class |
| Temperature rise | H class |
| Excitation | Brushless |
| AVR model | MX341B |
| Winding Pitch | 5/6 |
| IP rating | IP22 |
| Bearing | Single bearing |
| Voltage regulator | ±0.5% |

☐Space heater ☐Air filter (5% derating)

☐Anti-harsh environment ☐RTD ☐STD

**Alternator Ratings Table**

| Class-Temp Rise | | Cont.H-125/40℃ | | | | Standby-163/27℃ | | | |
|---|---|---|---|---|---|---|---|---|---|
| 50Hz | Series Star(V) | 380 | 400 | 415 | 440 | 380 | 400 | 415 | 440 |
| | Output(kVA) | 1505 | 1550 | 1550 | N/A | 1615 | 1660 | 1660 | N/A |
| | Efficiency(%) | 95.2 | 95.4 | 95.5 | N/A | 95.2 | 95.4 | 95.5 | N/A |
| 60Hz | Series Star(V) | 416 | 440 | 460 | 480 | 416 | 440 | 460 | 480 |
| | Output(kVA) | 1705 | 1815 | N/A | 1890 | 1820 | 1945 | N/A | 2025 |
| | Efficiency(%) | 95.2 | 95.2 | N/A | 95.4 | 95.2 | 95.2 | N/A | 95.4 |

**De-Rates**

All values tabulated above are subject to the following reductions:

- 3% for every 500 meters by which the operating altitude exceeds 1000 meters above mean sea level
- 3% for every 5°C by which the operational ambient temperature exceeds 40°C
- For any other operating conditions impacting the cooling circuit please refer to applications

Note: Requirement for operating in an ambient exceeding 60°C and altitude exceeding 4000 meters must be referred to applications.

# Alternator Operating Charts

## 400V@50Hz

TBA

## 480V@60Hz

TBA

# One-step Load Acceptance

| ISO 8528-5 | 50Hz | | 60Hz | |
|---|---|---|---|---|
| | 50% sudden power increase | 100% sudden power decrease | 50% sudden power increase | 100% sudden power decrease |
| Transient frequency difference (%) | TBA | TBA | TBA | TBA |
| Frequency recovery time (s) | TBA | TBA | TBA | TBA |
| Transient voltage deviation (%) | TBA | TBA | TBA | TBA |
| Voltage recovery time (s) | TBA | TBA | TBA | TBA |

*All data comes from actual testing and is for reference only.

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# Control Panel

## DSE 4520 MKII

Auto start and auto mains failure control module
(Alternator frequency & can speed sensing)

### Key benefits

- Ultimate size to feature ratio.
- Automatically transfers between mains (utility) and generator.
- Hours counter provides accurate information for monitoring and maintenance periods.
- User-friendly set-up and button layout for ease of use.
- Multiple parameters are monitored simultaneously which are clearly displayed on the largest back-lit icon display in its class.
- The module can be configured to suit a wide range of applications.
- Compatible with a wide range of CAN engines including Tier 4.
- IP65 rating (with optional gasket) offers increased resistance to water ingress.

### Key features

- Auto Start and AMF mode in one module.
- J1939-75 support and CAN alarm ignore function.
- Alternator frequency & CAN speed sensing in one variant.
- Largest back-lit icon display in its class.
- Heated display option.
- Real time clock provides accurate event logging.
- Fully configurable via the fascia or PC using USB communication.
- Extremely efficient power save mode.
- 3 phase generator sensing.
- 3 phase mains (utility) sensing
- Compatible with 600 V ph to ph nominal systems.
- Generator/load power monitoring (kW, kVA, kVar, PF).
- Accumulated power monitoring (kWh, kVAh, kVarh).
- Generator overload protection.
- Generator/load current monitoring and protection.
- Fuel and start outputs (configurable when using CAN).
- 4 configurable DC outputs.
- 3 configurable analogue/digital inputs
- 4 configurable digital inputs.
- Configurable staged loading outputs.
- 3 engine maintenance alarms.
- Engine speed protection.
- Engine hours counter.
- Engine pre-heat.
- Engine run-time scheduler.
- Engine idle control for starting & stopping.
- Tier 4 engine instrumentation screens.
- Battery voltage monitoring.
- Start on low battery voltage.
- Configurable remote start input.
- 1 alternative configuration.
- Comprehensive warning, electrical trip or shutdown protection upon fault condition.
- LCD alarm indication.
- Event log (50)

### Expansion devices

☐N/A

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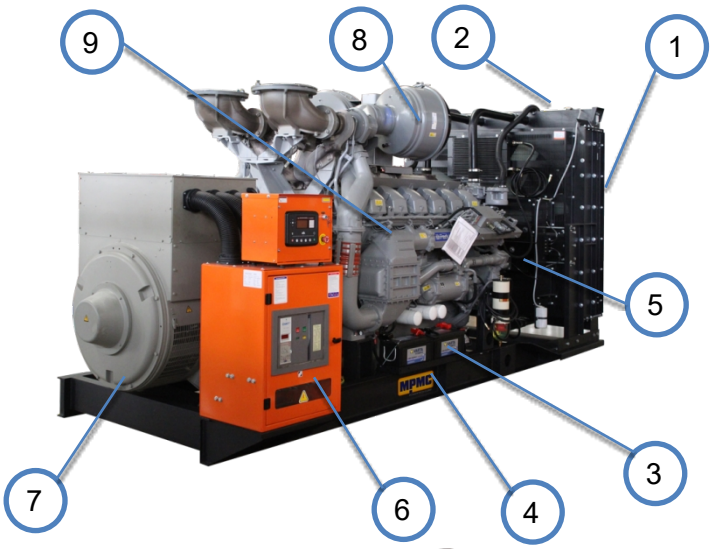
# Typical General Arrangement

## Main Components on MPMC Standard Product

1. Radiator
2. Expansion coolant tank
3. Start up battery
4. Base frame with AVM
5. Protective mesh plate for rotating mechanism
6. Control panel Breaker panel
7. Alternator
8. Air filter
9. Engine




10. ISO container
11. Control panel Breaker panel
12. Cable enter
13. Access door
14. Drain port
15. Maintenance ladder
16. Access door for radiator
17. Emergency stop

18. Corner fittings
19. Galvanized container rod lock
20. Fuel connector Drain port
21. Air inlet louver (cover plate for transport)

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## Generator Options

### Basement :

☐6 hours fuel tank
☐8 hours fuel tank
☐12 hours fuel tank
☐24 hours fuel tank
☐Bonded fuel tank
☐Fuel leakage sensor
☑Lifting points
☐Forklift holes
☐Drag holes
☑Expansion joint
☐Quick connector of external fuel pipe & tank
☐Three-way valve
☐Mechanical fuel level gauge
☐Electronic fuel level sensor
☐C-3 painting /☑C-4 painting /☐C-5 painting
☐Others:

### Electrical system :

☑CHINT Breaker /☐ ABB Breaker /☐Schneider Breaker /☐Others:
☑Manual breaker /☐Motorized breaker
☑3P Breaker /☐4P Breaker
☐RCD
☐MEN
☑External AC charger
☐Socket:
☐Plug:

### Silent Generator Only :

☐Galvanized canopy
☐Stainless steel canopy & hardware
☐Sponge materials /☑Rock wool with mesh plate
☑IP 21 /☐IP 22 /☐IP23
☑Zinc alloy door lock
☑Zinc alloy hinge
☑Access door for radiator
☐Aluminum canopy

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https://www.facebook.com/mpmcgroup https://www.linkedin.com/company/mpmcpowertech https://www.youtube.com/user/MPMCGenerator

*All information in this document is substantially correct at time of printing and may be altered subsequently. Final weight and dimensions will depend on completed specification.