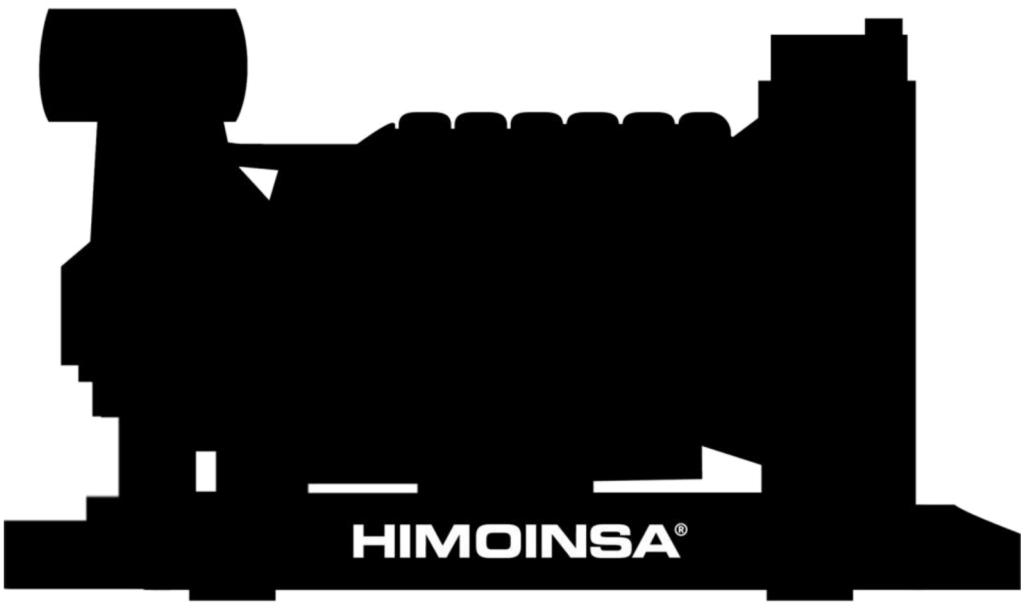
HIMOINSA
A YANMAR COMPANY

MODEL

# HGM-1120 T6 BIO

HEAVY RANGE
Open Skid
Powered by MTU




- OPEN SKID
- WATER-COOLED
- THREE PHASE
- 60 HZ
- BIOGAS

## Generating Rates

| SERVICE | | COP |
|---|---|---|
| Power | kVA | 1118 |
| Power | kW | 1118 |
| Rated Speed | r.p.m. | 1.500 |
| Main voltage | V | 480/277 |
| Rated at power factor | Cos Phi | 1 |



**HIMOINSA Company with quality certification ISO 9001**
**HIMOINSA gensets are compliant with EC mark which includes the following directives:**

- 2006/42/CE Machinery safety.
- 2014/30/UE Electromagnetic compatibility.
- 2014/35/UE electrical equipment designed for use within certain voltage limits
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/88/EC)
- EN 12100, EN 13857, EN 60204

Ambient conditions of reference according to ISO 8528-1:2020 normative: 1000 mbar, 25ºC, 30% relative humidity.

Limited-time running power (LTP):
According to Standard ISO 8528-1:2020, this is the maximum power available for a limited operating time of 500 Hours a year between the maintenance times recommended by the manufacturer under the environmental conditions established by the same.

Emergency Standby Power (ESP):
According to ISO ISO 8528-1:2020, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP

Continuous Power (COP): According to Standard ISO 8528-1:2020, this is the maximum power available for continuous loads for unlimited running hours a year between the maintenance times recommended by the manufacturer under the environmental conditions established by the same.

"Class G2" performance according to the load impact test according to ISO 8528-5:2020

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**Subsidiaries:**
PORTUGAL | POLAND | GERMANY | UK | SINGAPORE | UAE | PANAMA | DOMINICAN REPUBLIC | ARGENTINA | ANGOLA | SOUTH AFRICA

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## Engine Specifications 1.500 r.p.m.

| ENGINE | | COP |
|---|---|---|
| Rated Engine Output | kW | 1200 |
| Manufacturer | | MTU |
| Model | | 12V4000L32 |
| Engine Type | | 4-stroke Otto Cycle |
| Injection Type | | Carburization |
| Aspiration Type | | Turbocharged and after-cooled |
| Number of cylinders and arrangement | | 12-V |
| Bore and Stroke | mm | 170 x 210 |
| Displacement | L | 57,2 |
| Cooling System | | Coolant |
| Lube Oil Specifications | | SAE 40 |
| Compression Ratio | | 13,9 |
| Fuel Consumption 100% COP | $Nm^3/h$ | 551 |
| Fuel Consumption 75 % COP | $Nm^3/h$ | 423,4 |
| Fuel Consumption 50 % COP | $Nm^3/h$ | 303 |
| Lube oil consumption with full load | g/kWh | 0,2 |
| Total oil capacity including tubes, filters | L | 260 |
| Governor | Type | Electrical |
| Air Filter | Type | Dry |

## Generator

| Generator | | |
|---|---|---|
| Manufacturer | | STAMFORD |
| Poles | No. | 4 |
| Connection type (standard) | | Star |
| Mounting type | | S-00 21" |
| Insulation | Class | H class |
| Enclosure (according IEC-34-5) | | IP23 |
| Exciter system | | Self-excited, brushless |
| Voltage regulator | | A.V.R. (Electronic) |
| Bracket type | | Single bearing |
| Coupling system | | Flexible disc |
| Coating type | | Standard (Vacuum impregnation) |



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# Application Data

| Exhaust System | | |
|---|---|---|
| Maximum exhaust temperature | ºC | 445 |
| Exhaust Gas Flow | $m^3$/min | 79,3 |
| Maximum allowed back pressure | mbar | 60 |

| Necessary Amount Of Air | | |
|---|---|---|
| Intake air flow | $m^3$/h | 4415 |
| Cooling Air Flow | $m^3$/s | 34,44 |
| Alternator fan air flow | $m^3$/s | 3,45 |

| Starting System | | |
|---|---|---|
| Starting power | kW | 9 |
| Starting power | CV | 12,24 |
| Auxiliary Voltage | Vdc | 24 |

| Fuel System | | |
|---|---|---|
| Fuel Oil Specifications | | Biogas |
| Lower heating value (LHV) | kWh/$Nm^3$ | 5 |
| Composition * | | 60% Methane and 40% Carbon Dioxide |
| Fuel supply connection size | mm | 125 |
| Fuel supply pressure | mbar | 100 - 200 |
| Fuel Tank | L | 0 |

** Check other composition*

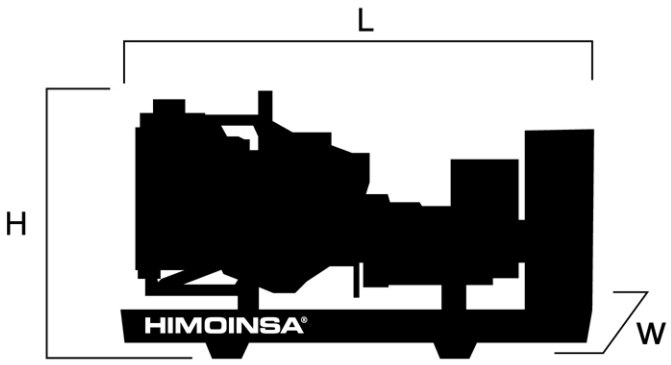
| Gearbox | | |
|---|---|---|
| Gearbox Efficiency | % | 99,1 |



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# Dimensions




| Weight and Dimensions | | |
|---|---|---|
| (L) Length | mm | 9.630 |
| (H) Height | mm | 2.690 |
| (W) Width | mm | 2.150 |
| Maximum shipping volume | $m^3$ | 55,68 |
| (*) Weight with liquids in radiator and sump | kg | 16.610 |

*(*) (with standard accessories)*

STANDARD VERSION



Himoinsa China has the right to modify any feature without prior notice.
Weights and dimensions based on standard products. Illustrations may include optional equipment.
Technical data described in this catalogue correspond to the available information at the moment of printing.
Industrial design under patent.

Local Distributor

# CONTROL PANEL MODEL

## CC2

*Himoinsa Switching cabinet WITH display. Digital control unit CEC7*

## AC5

*Automatic mains failure control panel. Wall-mounted cabinet WITH transfer switch and thermal magnetic protection (depending on current and voltage). Digital control unit CEA7*

## M5

*Control panel with CEM8 Auto-Start controller, thermal-magnetic and earth leakage relay (according to voltage and frequency). Digital control unit CEM 8*

## AS5

*Automatic panel WITHOUT transfer switch and WITHOUT mains control with CEM8 unit. (*) AS5 as optional with CEA8 unit. Automatic panel without transfer switch and WITH mains control. Digital control unit CEM8 CEA8*

## AS5 + CC2

*Automatic panel WITH transfer switch and with mains control. The display will be on the genset and on the cabinet. Digital control unit CEM8+CEC8*



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# Controller features (I)

• : Standard
x : Not included
• : Optional

| Generator Readings | CEA 7-G | CEC 7 | CEM 8 |
|---|---|---|---|
| Voltage between phases | • | • | • |
| Voltage between neutral and phase | • | • | • |
| Current intensities | • | • | • |
| Frequency | • | • | • |
| Apparent power (Kva) | • | • | • |
| Active power (Kw) | • | • | • |
| Reactive power (kVAr) | • | • | • |
| Power factor | • | • | • |
| Low feed pressure | • | • | • |
| Sealing check solenoid valve | • | x | • |
| **Mains Readings** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| Voltage between phases | • | • | x |
| Voltage between phases and neutral | • | • | x |
| Current intensities | • | • | x |
| Frequency | • | • | x |
| Apparent power | • | x | x |
| Active power | • | x | x |
| Reactive power | • | x | x |
| Power factor | • | x | x |
| **Engine Readings** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| Coolant temperature | • | x | • |
| Oil pressure | • | x | • |
| Battery voltage | • | x | • |
| R.P.M. | • | x | • |
| Battery charge alternator voltage | • | x | • |
| **Engine Protections** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| High water temperature | • | x | • |
| High water temperature by sensor | • | x | • |
| Low water temperature by sensor | • | x | • |
| Low oil pressure | • | x | • |
| Low oil pressure by sensor | • | x | • |
| Low water level | • | x | • |



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# Controller features (II)

• : Standard
x : Not included
• : Optional

| Engine Protections | CEA 7-G | CEC 7 | CEM 8 |
|---|---|---|---|
| Unexpected shutdown | • | x | • |
| Stop failure | • | x | • |
| Battery voltage failure | • | x | • |
| Battery charge alternator failure | • | x | • |
| Overspeed | • | x | • |
| Underspeed | • | x | • |
| Start failure | • | x | • |
| Emergency stop | • | • | • |
| **Alternator Protections** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| High frequency | • | • | • |
| Low frequency | • | • | • |
| High voltage | • | • | • |
| Low voltage | • | • | • |
| Short-circuit | • | x | • |
| Asymmetry between phases | • | • | • |
| Incorrect phase sequence | • | • | • |
| Inverse power | • | x | • |
| Overload | • | x | • |
| Genset signal drop | • | • | • |
| **Counters** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| Total hour counter | • | • | • |
| Partial hour counter | • | • | • |
| Kilowatt meter | • | • | • |
| Starts valid counters | • | • | |
| Starts failure counters | • | • | • |
| Maintenance | • | • | • |
| **Communications** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| RS232 | • | • | x |
| RS485 | • | • | • |
| Modbus IP | • | • | • |
| Modbus | • | • | • |
| CCLAN | • | x | • |



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# Controller features (III)

• : Standard
x : Not included
• : Optional

| Communications | CEA 7-G | CEC 7 | CEM 8 |
|---|---|---|---|
| Software for PC | • | • | • |
| Analogue modem | • | • | • |
| GSM/GPRS modem | • | • | x |
| Remote screen | • | x | • |
| Tele signal | • (8 + 4) | x | • |
| J1939 | • | x | • |
| **Features** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| Alarm history | • (100) | • (100) | • |
| External start | • | • | • |
| Start inhibition | • | • | • |
| Mains failure start | • | • | x |
| Start under normative EJP | • | x | • |
| Pre-heating engine control | • | x | • |
| Genset contactor activation | • | • | • |
| Mains & Genset contactor activation | • | • | x |
| Engine temperature control | • | x | • |
| Manual override | • | x | • |
| Programmable alarms | • | x | • |
| Genset start function in test mode | • | • | • |
| Programmable outputs | • | x | • |
| Multilingual | • | • | • |
| **Special Functions** | **CEA 7-G** | **CEC 7** | **CEM 8** |
| GPS Positioning | • | x | x |
| Synchronisation | x | x | x |
| Mains synchronization | x | x | x |
| Second Zero elimination | x | x | x |
| RAM7 | • | x | • |
| Remote screen | • | x | • |



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# Generator set features

## Engine

· Biogas Engine
· 4-stroke cycle
· Water-cooled
· 24V electrical system
· Dry air filter
· Remote radiator
· HTW sender
· LOP sender
· Electronic governor
· Hot parts protection
· Moving parts protection

## Alternator

· Self-excited and self-regulated
· 4 poles
· AVR governor
· IP23 protection
· H class insulation

## Electrical system

· Electric control and power panel with measurements devices and control unit (according to necessity and configuration)
· Battery Switch
· Battery charger (standard on gensets with automatic control panels)
· Heating resistor (standard on sets with automatic control panels)
· Battery charger alternator with ground connection
· Starter battery/ies installed (cables and bracket included)
· Ground connection electrical installation with connection ready for ground spike (not supplied)

## Open set version

· Steel chassis
· Emergency stop button
· Anti-vibration shock absorbers
· Steel industrial silencer -15db(A) attenuation
Optional : · Steel residential silencer -35db(A) attenuation.

## Gas ramp

· Gas filter
· Double solenoid valve
· Gas pressure regulator
· Low pressure switch
· High pressure switch
· Inlet pressure manometer
· Outlet pressure manometer



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MODEL

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## PDF Summary

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Page 1. Genset data
Page 2. Engine Specifications. Generator Specifications.
Page 3. Installation Data
Page 4. Dimensions
Page 5. Control Panel Model
Page 6. Controller features (I)
Page 7. Controller features (II)
Page 8. Controller features (III)
Page 9. Generator Features & Options
Page 10. PDF Summary

