



Wood Gas Combined Heat and Power Unit ENERGIN® M06 GEN+ H122

Datasheet, 500 mg NO_x

The ENERGIN® GEN+ combined heat and power unit simultaneously generates electricity and uses the heat from the engine jacket water to heat water. It can be operated in parallel with the public network or with an isolated load. As an option, automatic emergency operation and/or island-parallel operation with other generators is possible.

The unit is supplied as a compact, fully functional unit, with or without a sound attenuating enclosure. The engine, generator, heat exchangers for oil and jacket water as well as the control and power panel are mounted, ready for operation on the vibration-decoupled base frame. A lubrication oil system, which allows operation of up to 2000 hours without manual lube oil refilling, is integrated on the unit.

The electrical control system provides protection and control functions for automatic or manual operation. A 12" touch panel informs about operating conditions and allows the operation and parameterization of the system. Various interfaces are available for communication with other power generators and an overhead control system. An Ethernet interface allows connection to the Internet for remote monitoring and remote maintenance.

The entire system is certified according to the BDEW medium voltage directive (Grid code).

TECHNICAL DATA

Manufacturer		R Schmitt Enertec
ENERGIN® Type		M06 GEN+ H122
Electrical power ¹	kW	122
Thermal power ²	kW	82
Gas consumption ³ (LHV)	kW	351
Self consumption ⁴	kW	4,3

DESIGN

Fuel type		Wood Gas
Lower heating value LHV	kWh/Nm ³	1,4
Gas flow pressure ⁵	kPa	3,5 - 5,0
Inlet air temperature	°C	20
Exhaust temperature	°C	495
Hot water temperature ⁶	°C	70 / 85
Hot water flow rate	m ³ /h	4,8

EXHAUST EMISSIONS⁷ WITHOUT CATALYST

NO _x ⁸	mg/Nm ³	500
CO	mg/Nm ³	3000
Formaldehyde	mg/Nm ³	100

ENGINE

Manufacturer		R Schmitt Enertec
ENERGIN® Type		M06-HT2D41
Working principle		4-stroke
Cylinder configuration		6 in V / 90°
Valves per cylinder		4
Aspiration		turbocharged
Mixture cooling		2-staged
Displacement	ltr	11,3

LUBE OIL

Lube oil volume	ltr	255
Consumption	ltr/OH	0,03

ALTERNATOR

Manufacturer		Leroy Somer
Type		LSA 46.3 S4
Voltage	V / Hz	400 / 50
Speed	1/min	1.500
Efficiency	%	95,1



PERFORMANCE⁹

Load		100 %	75 %	50 %
Electrical power	kW	122	92	61
Thermal power	kW	82	61	43
Fuel consumption	kW	351	269	193
Gas flow at LHV	Nm ³ /h	244	187	134
Electrical efficiency	%	34,8	34,2	31,6
Thermal efficiency	%	23,4	22,7	22,3
Total efficiency	%	58,2	56,9	53,9
Exhaust gas flow ¹⁰	m ³ /h	1.717	1.328	958
Air requirement	m ³ /h	4.216	3.543	3.024
Exhaust air ¹¹	m ³ /h	3.699	3.161	2.761

DIMENSIONS AND WEIGHTS WITH SOUND ENCLOSURE

Length	mm	3.200
Height	mm	2.000
Height with 90° elbow	mm	2.990
Width	mm	1.440
Dry weight	kg	3.110
Operational weight	kg	3.400

CONNECTIONS

Exhaust	DN / PN	150 / 10
Fuel gas	DN / PN	80 / 16
Exhaust air	mm	720 x 720
Mixture	DN / PN	40 / 16
Process water	DN / PN	50 / 16

¹ +0 % tolerance on electrical power output

² - 3/+ 8 % tolerance for thermal power @ 495 °C

³ +5 % tolerance on fuel consumption

⁴ average self consumption without emergency cooling

⁵ maximum variation of 10 % for set value

⁶ Return/flow temperature

⁷ Exhaust emissions related to 5 % oxygen in dry exhaust

⁸ Setup for 250 mg/Nm³ NO_x possible (changed performance data)

⁹ at standard conditions according to ISO 3046-1; cos φ = 1

¹⁰ wet exhaust gas at 495 °C

¹¹ ΔT = 15 K



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