Propane Combined Heat and Power Unit

ENERGIN® M06 GEN+ P205

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+ P205
Electrical power[1]	kW	205
Thermal power[2]	kW	174
Gas consumption[3] (LHV)	kW	573
Self consumption[4]	kW	4,3

DESIGN

Fuel type		Propane
Lower heating value LHV	kWh/Nm³	26,2
Gas flow pressure[5]	kPa	2,2 - 5,0
Inlet air temperature	°C	20
Exhaust temperature	°C	494
Hot water temperature[6]	°C	70 / 85
Hot water flow rate	m³/h	10,3

EXHAUST EMISSIONS[7] WITHOUT CATALYST

NO_x[8]	mg/Nm³	500
CO	mg/Nm³	1000
Formaldehyde	mg/Nm³	100

ENGINE

Manufacturer		R Schmitt Enertec
ENERGIN® Type		M06-PT2D41
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	0,06

ALTERNATOR

Manufacturer		Leroy Somer
Type		LSA 46.3 L11
Voltage	V / Hz	400 / 50
Speed	1/min	1.500
Efficiency	%	95,8

PERFORMANCE[9]

Load		100 %	75 %	50 %
Electrical power	kW	205	154	103
Thermal power	kW	174	136	103
Fuel consumption	kW	573	439	314
Gas flow at LHV	Nm³/h	22	17	12
Electrical efficiency	%	35,8	35,1	32,8
Thermal efficiency	%	30,4	31,0	32,8
Total efficiency	%	66,2	66,1	65,6
Exhaust gas flow[10]	m³/h	2.272	1.701	1.185
Air requirement	m³/h	5.348	4.370	3.612
Exhaust air[11]	m³/h	4.433	3.707	3.163

DIMENSIONS AND WEIGHTS WITH SOUND ENCLOSURE

Length[12]	mm	3.200
Height	mm	2.250
Height with 90° elbow	mm	3.250
Width	mm	1.340
Dry weight	kg	3.350
Operational weight	kg	3.650

CONNECTIONS

Exhaust	DN / PN	150 / 10
Fuel gas	DN / PN	50 / 16
Exhaust air	mm	720 x 720
Mixture	DN / PN	40 / 16
Process water	DN / PN	50 / 16
Exhaust condensate	DN / PN	Rp 1/2″

[1] +0 % tolerance on electrical power output
[2] - 3/+ 8 % tolerance for thermal power @ 494 °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 494 °C
[11] ΔT = 15 K
[12] without optional heating water pump group

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