

Technical Datasheet Stirling CHP Gen500B

Version 8/23

Description:

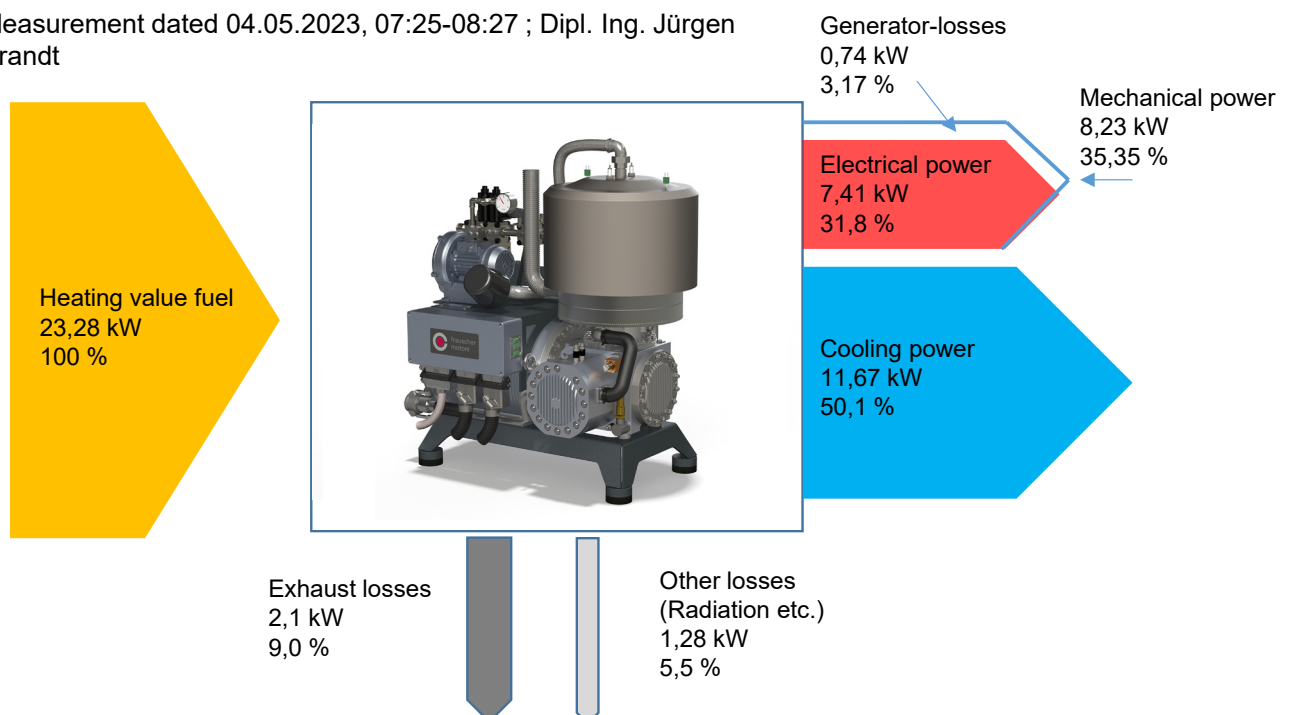
The Stirling CHP Gen500B is a ready-to-use Stirling aggregate for the conversion of energy-containing gases into electricity. The application for biogas and weak gases is in the foreground. The CHP is ideal for companies, farmers or institutions in which combustible gases are produced which, due to their composition, can no longer be used by petrol engines to generate electricity. In many cases, for example, there is no need for thermal disposal of gases containing methane in flare systems. The use of off-gas in biomethane production is another example of an economical use of the waste gas.

The CHP consists of the following components:

- > Stirling engine based on the alphagamma® process with a displacement of 500 ccm
- > Gaseous fuel burners, nozzle-mixing matrix burner
- > Heat exchanger for combustion air preheating from the exhaust gas energy
- > Integrated 3-phase asynchronous generator, 7.5 kW, also used as a starter motor
- > Direct connection to the mains supply 3x400 volts, 50 Hz
- > PLC control with color display and approved firing module
- > Connections for cooling water circuit, process gas and exhaust gas

Energy balance when operated with natural gas:

Measurement dated 04.05.2023, 07:25-08:27 ; Dipl. Ing. Jürgen Brandt



Technical Datasheet Stirling CHP Gen500B

Version 8/23



www.frauscher-motors.com

Performance data in tabular form:

Date		04.05.2023
Time		07:25-08:27
El. generator power	kW	7,41
Pressure in the buffer space	bar	45,5
Medium process pressure	bar	48,2
Mean pressure difference	bar	2,7
Heater head temperature	°C	792,9
Temperature hot process gas side	°C	680,3
Temperature cold process gas side	°C	50,6
Cooling water temperature outlet	°C	36,52
Cooling water temperature inlet	°C	29,9
Process cooling capacity	kW	11,25
Overall cooling capacity	kW	11,67
Motor efficiency	%	41,4%
Exhaust temperature	°C	244,0
Number of revolutions	1/min	1508,1
Fuel performance (LCV)	kW	23,278
Overall electrical efficiency (LCV)	%	31,8%

Measurements from May 4th, 2023, Examiner: Dipl.Ing. Jürgen Brandt

Techn.Datasheet_Gen500B
19.08.2023 signed by Josef Frauscher