

Operational mode	Mains parallel operation	
Energy efficiency ¹⁾	A++	
Fuel	Nature gas	
stepless modulation range	-100%-	-50%-
Electric output (P_{el})	16 kW	8 kW
Thermal output ⁷⁾ (P_{th})		
with calorific value use (RT 40 °C)	38,0 kW	27,0 kW
without calorific value use (RT 60 °C)	35,6 kW	24,7 kW
Fuel consumption ¹⁾		
with calorific value use (RT 40 °C)	51,7 kW	33,0 kW
without calorific value use (RT 60 °C)	51,8 kW	32,8 kW
CHPP coefficient ²⁾	0,46	0,35

- All of the following information at rated power (100%) and 40 °C return -

Efficiency	- EN 50465 -	- actual value -
Total efficiency	104,5 %	99,3%
Electric efficiency	31,0 %	29,4 %
Thermal efficiency	73,5 %	69,9 %
Primary energy savings ³⁾	33,1 %	29,6 %
Primary energy factor $f_{PE,WV}$ ⁶⁾	0,32	0,40
Total annual use efficiency ³⁾	104,5 %	99,3 %

Gas-connection pressure	20-50 mbar
Gas-flow pressure	≥ 16 mbar
Flow rate with natural gas	5,4 Nm³/h (10,00 kWh/m ³)

Flow temperature	max. 90°C
Return temperature	max. 70°C
Max. System pressure	4 bar (heating side)

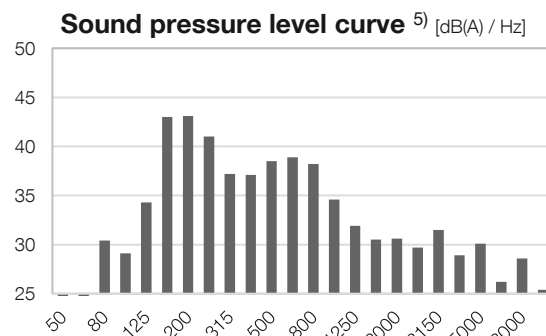
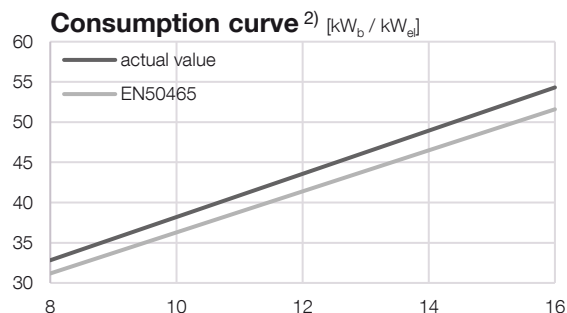
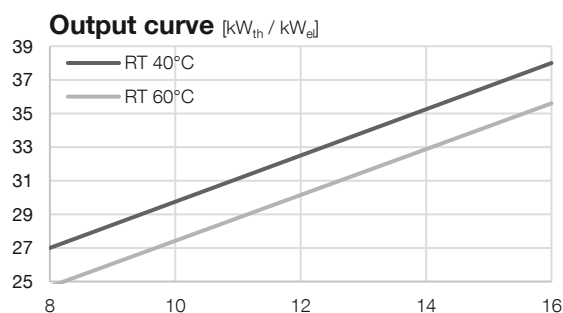
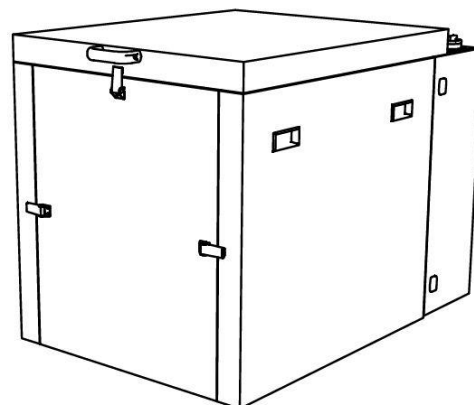
Combustion air requirement	min. 58 m³/h (65kg/h)
Ambient temperature	5°C to max. 35°C

Exhaust gas emissions	at 0 Vol% remaining oxygen
CO (carbon monoxide)	37,0 mg/kWh _b
NOx (nitrogen oxide)	26,9 mg/kWh _b

Exhaust gas temperature ²⁾	~ 50 °C
Exhaust gas volume flow	~ 63 m³/h
Exhaust gas mass flow dry	~ 70 kg/h
Exhaust gas back pressure ⁴⁾	max. 5 mbar after CS

Sound pressure level CHPP ⁵⁾ **45,9 dB(A)** (1 m distance)

CHPP: Dimensions, weights and connections	
L x W x H CHPP w/o handles	1,27 x 0,82 x 0,98 m
Weight CHPP incl. oil + water	740 kgs
ø x x H CS ⁴⁾	0,30 x 1,52 m (w/o flanges)
Weight CS ⁴⁾	30 kgs
Colour CHPP	Pantone 5517C
Heating connections (VL)	R 1" Flow (warm) R 1" Return (cold)
Exhaust gas connection CS ⁴⁾	DN100 (Jeremias ew-kl)
Gas connection	R 3/4"



¹⁾ According to EN 50465, tolerance 5%

²⁾ Return-temperature 40°C

³⁾ According to EU RL 2004/8/EG with 100% internal use

⁴⁾ Combination silencer

⁵⁾ According to DIN EN ISO 3744:2011-2

⁶⁾ According to EnEV 2014: f_{FE} -power = 2,8

⁷⁾ System as new values

Engine	K18
Type	Straight engine (Otto)
Operation	4-stroke
Cylinder	3
Displacement	1,8 litres
Nominal engine speed	1500 1/min

Cabinet: Dimension and weight
 (Wall mounting, connections at the bottom, standard cable set 6m)

W x D x H	0,40 x 0,19 x 0,52 m
Weight	21 kg
Colour	Pantone 5517C

Asynchronous generator EMOD WKASYG

Cooling	water-cooled
Power	16 kW
Voltage	400 V
Nominal current	30 A
Frequency	50 Hz
Operational mode	S1

Electrical data smartblock 16

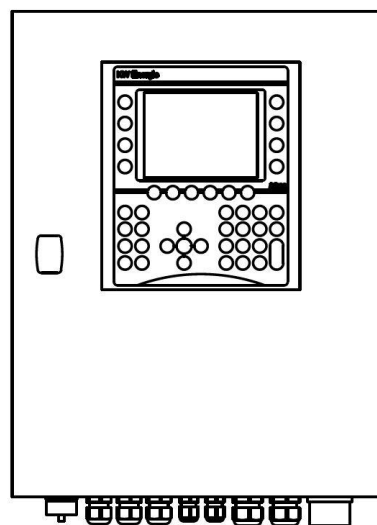
max. effective power PA_{max} :	16 kW
max. apparent power SA_{max} :	16,8 kVA
$\cos \varphi$	0,95
Nominal voltage UN:	400 V
Rated current Ir:	25 A
Grid input:	Three phase current
Isolated operation intended?	No
Motor-driven start intended?	No
Starting current IA:	-
Short circuit current I"K:	0,17 kA
Short circuit stability of the complete system IK:	10 kA
Reactive power compensation:	existing
Number of compensation steps:	1
Reactive power per step:	7,3 kVAR
Detuning factor respectively resonance frequency:	0
Own requirement:	0,045 kVA

Connection to the low voltage grid
 Operational mode according to VDE-AR-N 4105
 "Generation units at the low voltage grid - technical minimum requirements for connection and parallel operation of generation units at the low voltage grid"

Settings grid protection (VDE-AR-N 4105)

Voltage drop protection U<	0,8 U_n (100 ms)
Voltage increase protection U>	1,1 U_n (100 ms)
Voltage increase protection U>>	1,15 U_n (100 ms)
Frequency drop protection f<	47,5 Hz (100 ms)
Frequency increase protection f>	51,5 Hz (100 ms)

Line protection on building site
 Circuit breaker 35 A type: E



smartblock 16 control BR06

Freely programmable SPS control system to control, adjust, calculate, measure and display results. The control system is equipped with a full graphics display and all function buttons, required to operate the combined heat and power plant. The 5,7" LCD display shows information about the system and its current status.

The BR06 can optionally be expanded by a heating control system, requirement peak load boiler (up to 2 boilers), data transfer via LAN and Internet with an error notification via email (only with DSL) and an interface connection to external systems (Ethernet UDP, Mod-Bus RTU/TCP, RK512, 3964R).

Additionally, the CHPP can be connected to virtual power plants using VHP-Ready and net.storm.

Standard reference conditions according to EN 50465: The technical data are based on natural gas H with a heating value of 10,0 kWh/Nm³ (Total air pressure 100 kPa, air temperature 25 °C, relative humidity 30 %, 0m above sea level). The nominal power can be less, depending on the actual height above sea level. The tolerance of the specific fuel consumption is +5% at nominal power (EN 50465) and the tolerance of the usable thermal output is 7% at nominal power. We reserve the right to change data and characteristics without prior notice in accordance with our business policy and the ongoing development process. All details refer to systems as new without wear and tear or traces of usage.