



Dachs G/F

Technical Data



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Manufacturer	SenerTec Kraft-Wärme-Energiesysteme GmbH Carl-Zeiss-Str. 18, 97424 Schweinfurt, Germany			
Type	Dachs ¹⁾	G5.5 ²⁾	G5.0 ^{2), 3)}	F5.5 ²⁾
Seasonal space heating energy efficiency class	A ⁺⁺			A ⁺⁺
Rated heat output (<i>Prated</i>)	14,7 kW	14,6 kW	14,6 kW	14,3 kW
Seasonal space heating energy efficiency	161 %	156 %	156 %	161 %
Annual energy consumption	7304 kWh 26 GJ	7487 kWh 27 GJ	7487 kWh 27 GJ	7106 kWh 26 GJ
Sound power level L_{WA} indoors	69 dB			
Electrical efficiency	24 %	23 %	23 %	24 %
Fuel	Natural gas		Propane	
Electrical output ⁴⁾	5,5 kW	5,0 kW	5,0 kW	5,5 kW
Thermal output ⁵⁾	14,7 kW	14,6 kW	14,6 kW	14,3 kW
Fuel input ⁶⁾	20,3 kW	19,6 kW	19,6 kW	20,0 kW
Auxiliary demand ⁷⁾	0,09 kW _{el}			
Voltage / frequency	3 ~ 230 V / 400 V; 50 Hz			
Efficiency:				
- electrical (H_i/H_s)	27/24 %	26/23 %	26/23 %	27/24 %
- thermal (H_i/H_s)	72/65 %	74/67 %	74/67 %	72/65 %
- overall efficiency (H_i/H_s)	99/89 %	100/90 %	100/90 %	99/89 %
Power performance coefficient	0,37	0,34	0,34	0,38
Sound pressure level ⁸⁾	54 (51) dB(A)			
Service intervals [running hours]	3 500 h			
Flue gases	Moisture-resistant exhaust gas pipe			
Location	According to national and local law			
Dimensions (width/depth/height) and weight	W (w/o controller): 72 cm; D: 107 cm; H: 120 cm; weight: approx. 530 kg			
Space requirements (width/depth)	Dachs: min. 192 cm / 182 cm; Dachs SE: min. 290 cm / 202 cm			
Efficiency class ⁹⁾	A ⁺⁺⁺			

Type	Dachs controller
Class	III
Contribution to space heating energy efficiency	1,5 %

¹⁾ The Dachs complies with the high efficiency criteria according CHP law;

²⁾ Minimum methane number: 35; including setting and nozzle adjustment on site;

³⁾ Reduced exhaust gas emission;

⁴⁾ According to DIN ISO 3046, measured at the generator terminals, values may differ depending on altitude, environmental conditions and conditions of use;

⁵⁾ Values from type/component test report for a return temperature of 30 °C with integrated condensing unit; maximum supply flow temperature 83 °C, maximum return flow temperature 70 °C;

⁶⁾ Values from type / component test report for a return temperature of 60 °C according to H_i , tolerance +/- 5%;

⁷⁾ Tolerance +/- 10% at 230V~;

⁸⁾ Sound power level at 1 m distance according to DIN EN ISO 3744; in brackets minimum levels with special accessories;

⁹⁾ Calculation according to EN 50465:2015 for Dachs packages with temperature controller;





Typical applications:

Multi-tenanted accommodation with centralised plant room, domestic dwellings, hotels, residential care homes, sheltered accommodation, extra care schemes, university accommodation, swimming pools, district heating schemes and light commercial applications.

Inspection marks:

Type testing by TÜV Süd¹⁾ (with quality mark), DVGW²⁾ certification mark. Conformity with the requirements for self-generation equipment connected to the low voltage grid, CE certification.

The Dachs...

works on the principle of combined heat and power generation. An internal combustion engine drives a generator which, in turn, produces electrical energy. Around 100 % of the heat that is produced by the engine and generator during this process is recovered and is fed directly into the building's centralised heating and hot water system. The electrical output of the different Dachs types ranges between 5,0 and 5,5 kW. The thermal output is up to 14,7 kW. The Dachs unit works in parallel with the mains electricity supply. Heat and power are produced at the same time.

The engine:

If serviced in accordance with the service schedule and maintenance instructions, the single-cylinder 4-stroke 580 cc special engine is designed for very long service.



The generator:

The specially-developed water-cooled asynchronous generator is firmly bolted to the engine, which drives the generator via a single-stage gear. The nominal active power of 5,5 kW is achieved with up to 91 % efficiency.

The enclosure:

The unit is housed in a sound-proofed and thermally insulated enclosure. The sound pressure level at a distance of 1 m is between 51 and 54 dB(A) in accordance with DIN EN ISO 3744 (anechoic chamber). To avoid structure-borne noise, all services are connected with flexible (heating water, fuel) or decoupled (exhaust gas) connections.

The controller:

The unit is controlled according to the heat demand. The integral microprocessor controller maintains a constant electrical output and regulates and monitors the Dachs unit, the heat generation and the heating, gas and electricity supply systems. With the additional SE ancillary board the controller takes care of controlling domestic hot water demands and heating circuits as well. The software can be updated via an infrared interface.

Multi modules option:

Up to 10 modules may be networked and operated via an integrated master controller.

Servicing:

Servicing is to be carried out by an authorised SenerTec partner according to the maintenance plan, repairs as required.

Exhaust system:

The exhaust gas is conducted through a flue duct system, proper for micro CHP systems. The exhaust gas temperature is less than 120 °C.

Interface options:

On-site communication requires a service notebook with an optical infrared sensor. Remote access is realised via internet connection to the SenerTec-server. An optional ethernet module allows to connect the Dachs unit with the SenerTec server.

The environment:

The engine concept for the Dachs G/F unit (lean-burn engine) allows low NO_x-values. An integral catalyser converts CO and HC. Producing power and heat at the same time utilises almost 100 % of the primary energy. Considerable amounts of primary energy can be saved and CO₂ emissions avoided compared to conventional, separate power and heat generation.

The Dachs versions:

Dachs

The ideal addition to the boiler

Dachs SE

The total energy solution

Fuels:

Natural gas, LPG

Output:

5,0 - 5,5 kW electrical
14,3 - 14,7 kW thermal

Service life:

Up to 15 years, depending on the annual operating hours and providing the unit is serviced according to servicing schedule and maintenance instructions.

¹⁾ Association for technical inspection in Germany

²⁾ German Technical and Scientific Association for Gas and Water