



# The Dachs

The Microgeneration



**SENERTEC**  
KRAFT · WÄRME · ENERGIESYSTEME

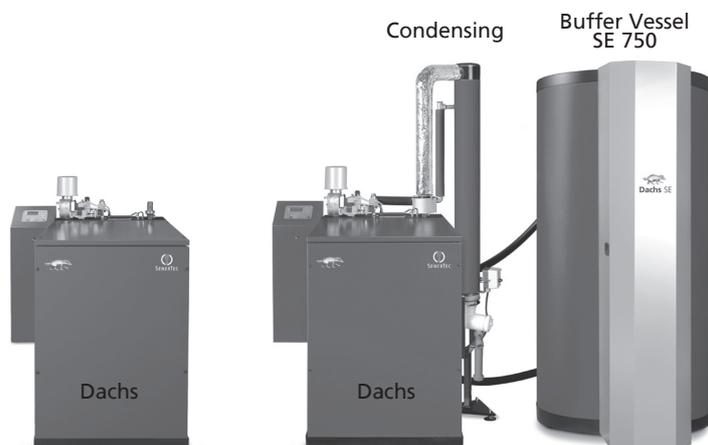
## Technical Data

Type	Dachs <sup>1)</sup>	G 5.5	G 5.5 Condensing <sup>2)</sup>	G 5.0 Low NOx	G 5.0 Low NOx Condensing <sup>2)</sup>	F 5.5 Low NOx	F 5.5 Low NOx Condensing <sup>2)</sup>
Fuel		Natural gas		Natural gas		Propane	
Electrical output [kW] <sup>5)</sup>		5,5		5,0		5,5	
Thermal output [kW] <sup>6)</sup>		12,5	14,8	12,3	14,6	12,5	14,8
Fuel input [kW] <sup>7)</sup>		20,5		19,6		20,5	
Auxiliary demand [kW <sub>el.</sub> ] <sup>8)</sup>		0,12					
Max. water flow temperature		83 °C					
Max. water return temperature		70 °C					
Voltage / frequency		3 ~ 230 V / 400 V 50 Hz					
Efficiency:		(at a return temperature of 60°C/35°C and nominal output)					
- electrical		27%		26%		27%	
- thermal		61%	72%	63%	74%	61%	72%
- Fuel efficiency		88%	99%	89%	100%	88%	99%
Power performance coefficient		0,44		0,41		0,44	
Noise level acc. DIN 45635-04		52 - 56					
Flue emission < German TA-Luft		X		X		X	
Service intervals [running hours]		3.500		3.500		3.500	
Minimum methane number <sup>9)</sup>		35		35		35	
Flue gases		Joint exhaust routing with boiler possible. Exhaust piping with or without addition of secondary air.					
Location		According to local fire regulations.					
Dimensions:		Width (without controller): 72 cm / Length: 107 cm / Height: 100 cm / Weight: 530 kg					
(Width/depth) [cm]:		Dachs: min. 192/182		Dachs Condensing: min. 192/202		Dachs SE Condensing: min. 290/202	

<sup>1)</sup> The Dachs complies with the high efficiency criteria according to §3 Abs.11 of the German CHP law from 25.10.2008; the primary energy savings EU-guideline 2004/8/EG from 11.02.2004 would be fulfilled; <sup>2)</sup> with external flue heat gas heat exchanger on a return temperature of 35°C; <sup>3)</sup> without ash-forming additives; recommendation: low-sulphur <sup>4)</sup> In accordance to SenerTec rapeseed specifications; <sup>5)</sup> Output to DIN ISO 3046, measured at the generator terminals. Precise values may differ according to altitude, environmental conditions and conditions of use <sup>6)</sup> Values from type / component test report for a return temperature of 60 °C; <sup>7)</sup> Values from type / component test report for a return temperature of 60 °C according to Hi, tolerance +/- 5%; <sup>8)</sup> tolerance +/- 10% at 230V~, calculated values for EnEV (Energy Conservation Ordinance); <sup>9)</sup> with adjustment and jet calibration on site.

## 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.

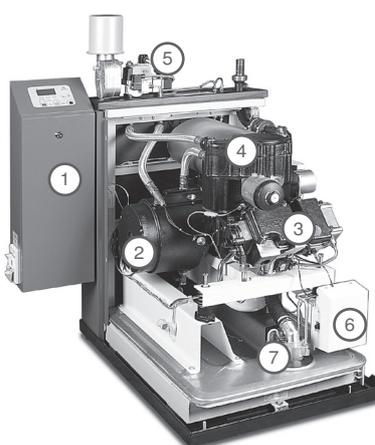


Dachs G/F

Dachs G/F SE Condensing

## Inspection marks

Type testing by TÜV Bavaria (k.Ü), DVGW quality mark. The important characteristics conform to the VDEW directive for self-generation equipment operated in parallel with the mains supply, CE certification, BG - clearance certificate.



### Dachs G/F:

- 1: MSR2 (Controller)
- 2: Generator
- 3: Engine
- 4: Flue gas heat exchanger/Silencer
- 5: Gas multibloc
- 6: Ignition
- 7: Gas volume regulator

Dachs G/F



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## The Dachs unit:

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 14.8 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 a 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 52 and 58 dB(A) in accordance with DIN 45635 (low reflection measure room). To avoid structure-borne noise, all services are connected with flexible connections.

## The controller (MSR2):

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. The power supply system is monitored by the integrated grid protection. 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 authorized SenerTec partner according to the maintenance plan, repairs as required.

## Exhaust system:

The flue gas are generally routed unpressurised via a special inlet pipe into the boiler flue or into the chimney. The flue gas temperature is approx. 140-160°C. With the Dachs unit, the flue gas temperature can be further reduced with an additional condensing exhaust heat exchanger (condensing unit). The flue gases are then dissipated via a flue gas pipe. Fuel efficiency can rise to over 100% (in relation to LHV for the fuel used) depending on the environmental conditions and conditions of use.

## Interface options:

Monitoring and controlling the MSR2 can either be realised onsite via a laptop or a internet connection. The integrated modem connects the controller to the SenerTec server.

## The environment:

The engine concept for the Dachs G/F unit (lean-burn engine) allows low NOx values. An integral catalyser converts CO and HC. In the Dachs HR unit, a soot filter reduces the amount of soot produced. Producing power and heat at the same time utilises almost 100% of the primary energy. Considerable amounts of primary energy can be saved and CO<sub>2</sub> emissions avoided compared to conventional, separate power and heat generation.

## The Dachs versions:

### Dachs

The Ideal addition to the boiler

### Dachs SE and

### Dachs SE condensing

The total energy solution

### Dachs NE (with MSR1):

safety on grid failure  
(see specific data sheet)

### Fuels:

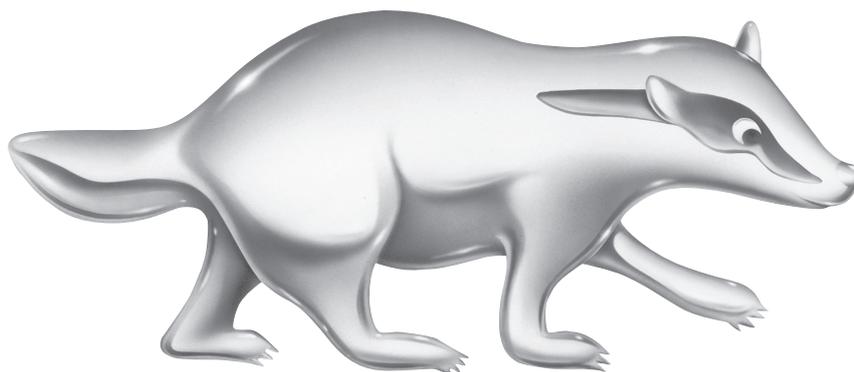
Natural gas, LPG

### Output:

5,0 - 5,5 kW electrical,  
12,3 - 12,5 kW thermal.

### Service life:

Up to 20 years, depending on the annual operating hours and providing the unit is serviced according to servicing schedule and maintenance instructions.



Soon appearing in a building near you...