



Danfoss Heat Pump DHP-H Opti Pro

An unbeatable level of comfort at the highest possible cost-effectiveness.



Danfoss DHP-H Opti Pro uses new innovative technology to operate at the highest possible annual efficiency, meaning you can get 75% or more of your energy consumption for free – using renewable energy stored in the bedrock, the ground or the water.

The new Opti technology incorporates an intelligent control system that via speed controlled circulation pumps ensures that the performance is always adjusted to the prevailing requirements and conditions of the heating system. This makes the heat pump always work under the most ideal conditions available, guaranteeing maximum efficiency, second by second, hour by hour.

DHP-H Opti Pro produces large amounts of hot water whilst using a minimum of energy. This is made possible by our two patented technologies, HGW* and TWS**.

This heat pump operates at a low sound level and it can easily be adapted to produce cost effective cooling. You can also control and monitor it via the Internet.

* Hot Gas Water heater, our new patented technology that utilizes existing house heating to produce hot water at the same time, which gives hot water as a bonus when you heat your home.

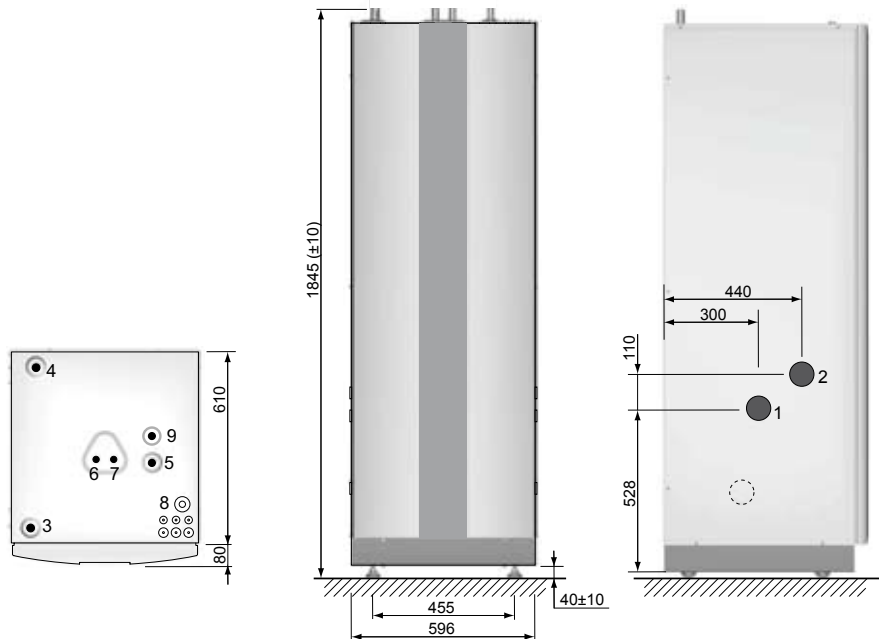
** Tap Water Stratificator, our patented technology developed to stratify hot water in the tank to ensure that heat is used optimally. This enables a hot water production that is faster and at higher temperatures than with traditional technology.

DANFOSS DHP-H OPTI PRO

Connection

The brine pipes can be connected on either the left or right-hand sides of the heat pump.

- 1 Brine in, 28 Cu
- 2 Brine out, 28 Cu
- 3 Heating system supply line, 22 Cu: 4-10 kW, 28 Cu: 12-16 kW
- 4 Heating system return line, 22 Cu: 4-10 kW, 28 Cu: 12-16 kW
- 5 Expansion line, 22 Cu
- 6 Hot water line, 22 Brass
- 7 Cold water line, 22 Brass
- 8 Lead-in for supply, sensor and communication cables
- 9 Temperature and pressure valve (valid only on certain models and markets)



| DHP-H Opti Pro | | | 6 | 8 | 10 | 12 | 16 |
|--|-------------------------------|------------------|---|---|---|---|---|
| Refrigerant | Type | | R407C | R407C | R407C | R407C | R407C |
| | Amount | kg | 1.15 | 1.30 | 1.45 | 1.55 | 1.70 |
| | Test pressure | MPa | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| | Design pressure | MPa | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| Compressor | Type | | Scroll | Scroll | Scroll | Scroll | Scroll |
| | Oil | | POE | POE | POE | POE | POE |
| Electrical data 3-N | Main supply | Volt | 400/50Hz | 400/50Hz | 400/50Hz | 400/50Hz | 400/50Hz |
| | Rated power, compressor | kW | 2.0 | 2.3 | 3.6 | 4.4 | 5.6 |
| | Auxiliary heater, max 3 steps | kW | 3/6/9 | 3/6/9 | 3/6/9 | 3/6/9 | 3/6/9 |
| | Start current | A | 12 | 10 | 18 | 17 | 18 |
| | Circuit breaker | A | 10 ³ /16 ⁴ /20 ⁵ | 16 ³ /16 ⁴ /20 ⁵ | 16 ³ /16 ⁴ /20 ⁵ | 16 ³ /20 ⁴ /25 ⁵ | 20 ³ /20 ⁴ /25 ⁵ |
| | Electrical data 1-N | Main supply | Volt | 230/50Hz | 230/50Hz | 230/50Hz | 230/50Hz |
| Rated power, compressor | | kW | 3.3 | 4.2 | 5.4 | 5.7 | * |
| Auxiliary heater, max 3 steps | | kW | 1.5/3/4.5 | 1.5/3/4.5 | 1.5/3/4.5 | 1.5/3/4.5 | * |
| Start current | | A | 58 | 76 | 97 | 108 | * |
| Circuit breaker | | A | 25 ³ /32 ⁴ /40 ⁵ | 25 ³ /32 ⁴ /40 ⁵ | 32 ³ /40 ⁴ /50 ⁵ | 32 ³ /40 ⁴ /50 ⁵ | * |
| Performance | | COP ¹ | | 4.74 | 4.88 | 4.84 | 4.75 |
| | COP ² | | 4.04 | 4.34 | 4.24 | 4.20 | 3.99 |
| | Heating capacity ² | kW | 5.3 | 7.5 | 9.4 | 11.0 | 16.4 |
| Nominal flow⁷ | Cooling circuit | l/s | 0.3 | 0.4 | 0.6 | 0.7 | 0.9 |
| | Heating circuit | l/s | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 |
| External available pressure⁶ | Cooling circuit | kPa | 97 | 94 | 74 | 72 | 81 |
| | Heating circuit | kPa | 93 | 79 | 93 | 54 | 71 |
| Max/min temperature | Cooling circuit | °C | 20/-10 | 20/-10 | 20/-10 | 20/-10 | 20/-10 |
| | Heating circuit | °C | 55/20 | 55/20 | 55/20 | 55/20 | 55/20 |
| Pressure switches | Low pressure | MPa | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| | Operating | MPa | 2.65/2.85 | 2.65/2.85 | 2.65/2.85 | 2.65/2.85 | 2.65/2.85 |
| | High pressure | MPa | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 |
| Anti freeze media | | | Ethylene glycol/ Ethanol | Ethylene glycol/ Ethanol | Ethylene glycol/ Ethanol | Ethylene glycol/ Ethanol | Ethylene glycol/ Ethanol |
| Water heater volume | | l | 180 | 180 | 180 | 180 | 180 |
| Weight | | kg | 229 | 229 | 229 | 238 | 242 |

The measurements are performed on a limited number of heat pumps which can cause variations in the results. Tolerances in the measuring methods can also cause variations.

- 1) At B0/W35 Δ10K warm side (excluding circulation pumps).
- 2) At B0/W35 according to EN14511 (including circulation pumps).
- 3) Heat pump with 3 kW auxiliary heater (1-N 1.5 kW).
- 4) Heat pump with 6 kW auxiliary heater (1-N 3 kW).
- 5) Heat pump with 9 kW auxiliary heater (1-N 4.5 kW).

6) Pressure drop that must not be exceeded outside the heat pump without the nominal flow being reduced. For the cooling circuit these values require a pipe of Ø 40x2.4.

7) Nominal flow: heating circuit Δ10K, cooling circuit Δ3K.

*) Not available in 230V 1-N version.