



## Danfoss Heat Pump DHP-R

Intelligent solution  
for larger buildings.

Danfoss DHP-R is a large capacity heat pump with capacities between 20 and 42 kW. Up to eight heat pumps can be combined for even higher requirements (connected in cascade). Energy is extracted from the bedrock, the ground or the water. DHP-R can be supplemented to also produce cooling.

DHP-R can be integrated to existing heating systems, such as an oil-fired boiler, electric boiler, district heating or wood, which then can supply extra energy for peak demands. The intelligent control monitors the entire heating installation.

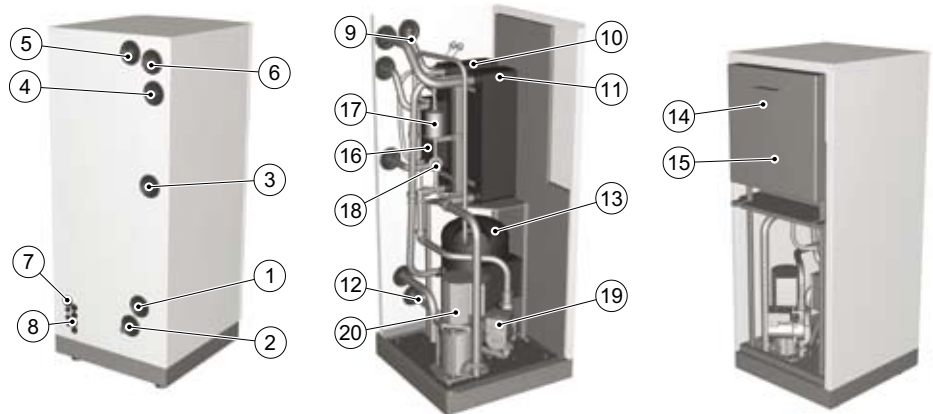
DHP-R can be controlled and monitored via the Internet. Perfect for those who have several buildings or want to control the system from a distance.



# DANFOSS DHP-R

## Connection

- 1 Coolant out (from HP)
- 2 Heat return (return line)
- 3 Return line hot-gas exchanger
- 4 Supply line hot-gas exchanger
- 5 Heat supply (supply line)
- 6 Coolant in (to HP)
- 7 Lead-in for communication cable
- 8 Lead-in for incoming supply and sensor
- 9 Supply pipe sensor
- 10 Condenser with draining for prim. side.
- 11 Evaporator
- 12 Return sensor
- 13 Compressor
- 14 Instrument panel
- 15 Electrical cabinet
- 16 De-superheater
- 17 Drying filter
- 18 Expansion valve
- 19 Condenser circulation pump
- 20 Coolant pump



DHP-R			20	26	35	42	21H	25H
<b>Refrigerant</b>	Type		R407C	R407C	R407C	R407C	R134a	R134a
	Amount	kg	3.4	3.5	3.6	4.2	2.7	2.9
	Test pressure	MPa	3.4	3.4	3.4	3.4	3.4	3.4
	Design pressure	MPa	2.95	2.95	2.95	2.95	2.45	2.45
<b>Compressor</b>	Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
	Oil		POE	POE	POE	POE	POE	POE
<b>Electrical data</b> 3-N~50Hz	Main supply	Volt	400	400	400	400	400	400
	Rated power, compressor	kW	8.6	11.7	14.2	17.9	14.2	17.9
	Rated power, circulation pumps	kW	0.9	1.4	1.4	1.4	0.9	0.9
	Start current	kW	99	127	167	198	167	198
	Start current, soft starter	A	69	82	96	106	96	106
	Circuit breaker	A	25	25	35	35	35	35
<b>Performance</b>	Heating capacity <sup>1</sup>	kW	18.2	24.5	32.8	38.4	20.2	24.2
	COP <sup>1</sup>		3.73	3.70	3.81	3.53	3.74	3.71
	Heating capacity <sup>2</sup>	kW	17.6	23.2	30.3	36.8	20.1	23.9
	COP <sup>2</sup>		3.09	3.03	3.11	2.91	3.22	3.18
	Power input <sup>1</sup>	kW	4.9	6.6	8.6	10.9	5.4	6.5
<b>Nominal flow<sup>3</sup></b>	Cooling circuit <sup>4</sup>	l/s	1.2	1.6	2.2	2.4	1.2	1.5
	Heating circuit	l/s	0.5	0.6	0.8	1.0	0.5	0.6
<b>External available pressure<sup>5</sup></b>	Cooling circuit	kPa	133	162	130	127	129	96
	Heating circuit	kPa	63	54	47	48	62	60
<b>Internal pressure drop</b>	Condenser		5	9	11	4	6	4
	Evaporator		37	50	58	53	41	49
	De-superheater		0.4	0.5	0.8	1.3	0.4	0.5
<b>Min/max temperature</b>	Cooling circuit	°C	20/-10	20/-10	20/-10	20/-10	20/-10	20/-10
	Heating circuit	°C	60/20	60/20	60/20	60/20	70/20	70/20
<b>Pressure switches</b>	Low pressure	MPa	0.08	0.08	0.08	0.08	0.03	0.03
	Operating		2.65	2.65	2.65	2.65	2.00	2.00
	High pressure	MPa	2.95	2.95	2.95	2.95	2.45	2.45
<b>Water volume</b>	Condenser	l	5.4	5.4	6.0	6.7	4.9	5.4
	Evaporator	l	3.4	3.8	5.6	5.1	2.9	3.2
	De-superheater	l	0.6	0.6	0.6	0.6	0.6	0.6
<b>Anti freeze media</b>		Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	
<b>Number of units</b>		1	1	1	1	1	1	
<b>Dimensions LxWxH</b>	mm		690x596x1490	690x596x1490	690x596x1490	690x596x1490	690x596x1490	690x596x1490
	Weight	kg	297	300	312	330	314	314
<b>Sound power level<sup>6</sup></b>	dB (A)		55	58	61	61	64	63

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 B0W35 according to EN14511 (including circulation pumps).  
2) At B0W45 according to EN14511 (including circulation pumps).  
3) Nominal flow: heating circuit Δ10K, cooling circuit Δ3K.

4) Anti-freeze in cooling circuit: Ethanol-water.  
5) At nominal flow.  
6) Sound power level measured according to EN ISO 3741 at B0W45 (EN 12102).