



## DHP-R ground source heat pump

# Solutions for large properties with a powerful control system

The DHP-R is a large capacity heat pump with capacities between 20 and 42 kW. Up to 8 heat pumps can be installed and combined together to create an output of 336 kW.

The DHP-R can be integrated with other heating systems, such as an oil-fired boiler, electric boiler or district heating systems, which then can supply extra energy for peak demands. A built in de-super-heater increases the temperature of hot water produced and is twinned with an anti-legionella function

to pasteurise the system. An intelligent controller monitors the whole system (heat pumps, auxiliary heat, cooling, subshunt groups, hot water) and an internet monitoring facility provides you with the reassurance with SMS or email in the unlikely event that a fault should occur.

This heat pump is perfect for those who have several buildings or large properties and want to control the system from a distance.



## Intelligent

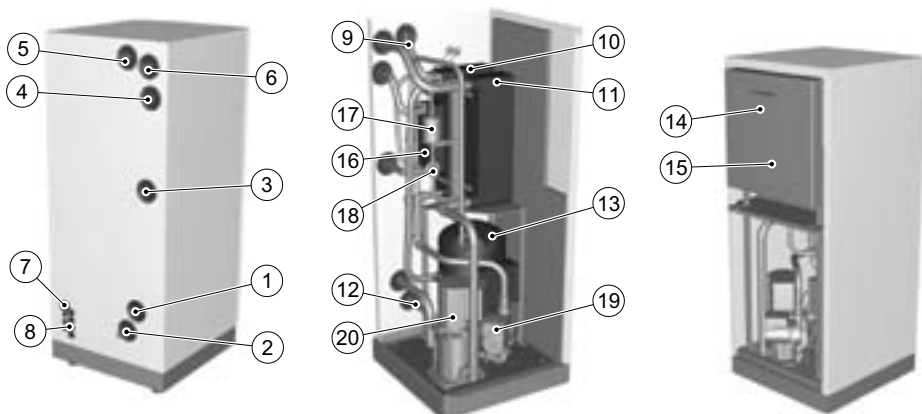
controller monitors

the whole system (heat pumps, auxiliary heat, cooling, subshunt groups, hot water) and the internet monitoring facility provides you with reassurance via SMS or email



**Connection heat pump**

- 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 power supply and sensors
- 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



<b>DHP-R</b>			<b>20</b>	<b>26</b>	<b>35</b>	<b>42</b>	<b>21H</b>	<b>25H</b>
Refrigerant	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
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
	Oil		POE	POE	POE	POE	POE	POE
Electrical data 3-N	Main supply	Volt	400	400	400	400	400	400
	Rated power, compressor	kW	8.8	11.8	15.7	19.9	15.7	19.9
	Rated power, circulation pumps	kW	0.9	0.9	1.45	1.45	0.9	0.9
	Start Current	A	21.5	24	27	37.8	27	37.8
	Fuse	A	25	25	35	35	35	35
Performance	COP <sup>1</sup>		4.06	3.99	4.04	3.92	3.90	3.90
	Heating capacity <sup>2</sup>	kW	18.2	24.5	32.8	38.4	20.2	24.2
	COP <sup>2</sup>		3.73	3.70	3.81	3.53	3.74	3.71
	Power input <sup>2</sup>	kW	4.9	6.6	8.4	10.9	5.4	6.5
Nominal flow <sup>3</sup>	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
External available pressure <sup>5</sup>	Cooling circuit	kPa	133	66.5	130	127	129	96
	Heating circuit	kPa	63	54	47	48	62	60
Internal pressure drop	Condenser	kPa	5	9	11	4	6	4
	Evaporator	kPa	37	72.5	58	53	41	49
	De-superheater	kPa	0.4	0.5	0.8	1.3	0.4	0.5
Max/min temperature <sup>6</sup>	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
Pressure switches	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
Sound power level <sup>7</sup>		dB (A)	55	58	61	61	64	63
Anti freeze media <sup>8</sup>	glycol + water solution with freezing point -17 ±2 °C							
Water volume	Condensor	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
Weight		kg	297	300	312	330	295	310

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.

3) Nominal flow heating circuit Δ10K, cooling circuit Δ3K  
4) Anti-freeze in cooling circuit: Ethanol-water.  
5) At nominal flow.

6) Please note that not all cooling circuit temperatures and heating temperatures can be combined.

7) Sound power level measured according to EN ISO 3741 at B0W45 (EN12102).

8) Always check local rules and regulations before using antifreeze.

1) B0/W35 Δ10K heating circuit (excl. circ.pump)  
2) B0/W35, According to EN14511 incl. circ.pump.



Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are registered trademarks of Danfoss A/S. All rights reserved