Save time and money
Streamline your heat pump business!

Heat Pump Components - Selection guide

One makes a difference
Add one more Danfoss component to your system and find out how all elements add up to maximise your heat pump efficiency.

www.danfoss.com/HeatPumpComponents
ONE REASON ONE PHILOSOPHY
– every component counts

Whether you’re producing heat pumps for residential applications or commercial applications of over 20 kW, you know how important it is to choose each component with care. The compressor, heat exchanger, control unit and indeed every other line component make a vital contribution to the smooth running and efficiency of your end product. Once combined, their impact is greater still.

JUST ONE LESS
Our studies show that even when you reduce the number of suppliers you work with by just one, you can reap significant financial benefits. The countless small efficiency gains – one less order to place, one less delivery to manage – combine to give an impressive reduction in your overall costs while at the same time as reducing the carbon footprint of your product.

Reducing your supplier base, even minimally, makes life that bit simpler. Working with Danfoss, a company that really understands the application, makes it simpler still.

TAKE THE LEAD
If you’re looking to reduce the carbon footprint of your products, to acquire the edge on seasonal performance and to reach (or exceed) the most stringent refrigerant legislation, you need a supplier that fully understands the heat pump application. You need to work with partners who comprehend, as well as you do, exactly how all the elements in your system add up to maximise your heat pump efficiency.

HOW CAN WE HELP YOU?
Take advantage of our expertise to drive your product development and to design even more efficient and competitive heat pump systems. Thanks to long experience of the heat pump application, we are able to design, select and support each component for optimal performance in this application - continuously pushing forward the boundaries of heat pump technology.
€10,000
Annual savings
Notice a dramatic difference in costs when you reduce your heat pump component supplier base by just one!
Whatever you need for your heat pump system you can find it at Danfoss. Each component is fully developed with the application in focus and is therefore precisely adapted to meet the needs of heat pump systems.

**COMPRESSORS**
Danfoss offers an optimized scroll compressor range for use in residential and commercial heat pumps from 5 to 240 kW. Thanks to a new reed valve design and optimized scroll set, our HHP compressors give you world class efficiency! They improve your heat pump’s performance, operating reliably even when outdoor temperatures go down to -20°C. PSH scroll compressor for commercial heat pumps holds two new innovations: a unique *Liquid Injection* solution to extend the operating envelope and reduce running costs, and a new *Operating Control System* for enhanced protection and reliability. Models range from 20 to 80 kW and can be combined in tandem and trio configuration up to 240 kW.

**HEAT EXCHANGERS**
Our new H-range Micro Plate Heat Exchangers (MPHEs) bring world class efficiency to your heat pump applications, working as condensers or evaporators in either air or ground source heat pumps. Designed to utilize the minimum amount of raw materials and refrigerants, they deliver immediate savings as well as improving long term price stability.

**CONTROLLERS**
Choose from a wide range of controllers for heat pump applications, all of which are based on a global, open and flexible system and can be programmed using standard communication protocols. We also offer different options and levels of support to facilitate your development and manufacturing process, as needed.

**LINE COMPONENTS**
For compact, lightweight line components that offer high accuracy, choose Danfoss’ heat pump line components. Suitable for a variety of applications such as diagnostics and performance monitoring, they offer flexibility in terms of installation and connection options as well as different connection styles.

**EXPANSION DEVICES**
Whether you need electronic or thermostatic expansion devices, Danfoss offers extremely safe solutions. Use these well-proven Danfoss components in your heat pump system and pass on the benefits of greater efficiency and reliability to your customers.
Why not take advantage of Danfoss’ expertise to help you choose exactly the right solution for your application? Our components are designed for use in different system designs and with different refrigerants so there are few limitations to the needs we can supply.

Discuss your objectives with us and we'll help identify the best solution, using the correct parts for the job. To get the ball rolling, just call your local Danfoss representative or check for more details on www.danfoss.com.

![Diagram of heat pump components](image)

## ONE REASON FOR EFFICIENCY

<table>
<thead>
<tr>
<th>Power Range</th>
<th>Compressors</th>
<th>Heat Exchangers</th>
<th>Expansion Devices</th>
<th>Controllers</th>
<th>Line Components</th>
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<tbody>
<tr>
<td>&lt; 10 kW</td>
<td>HHP015-HHP030</td>
<td>H22, H30, H55, H62</td>
<td>TUB, TUBE, TUC</td>
<td>Liquid line filter driers mono- and bi-flow (DML/DMB), Sight glasses (SG/SGP), Four-way valves (STF), Solenoid valves (EVR), Ball valves (GBC), Cartridges pressure controls (ACB), Pressure transmitters (AKS/NSK/XSK), Check valves (NRV), Temperature sensor (AKS/EKS).</td>
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<td>10-20 kW</td>
<td>HHP038-HHP045</td>
<td>H30, H55, H62</td>
<td>TUB, TUBE, TUC TC, TGE</td>
<td>Unit controller able to drive EEV directly (MCX061V)</td>
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<tr>
<td>&gt; 20 kW</td>
<td>PSH019-077, SZ084-380</td>
<td>H55, H62, H118</td>
<td>TGE</td>
<td>Unit controller (MCX08M) with External EEV driver (EIM336, EKD316, EXD316)</td>
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- **Compressors:**
  - HHP015-HHP030
  - HHP038-HHP045
  - PSH019-077, SZ084-380

- **Heat Exchangers:**
  - H22, H30, H55, H62
  - H30, H55, H62
  - H55, H62, H118

- **Expansion Devices:**
  - TUB, TUBE, TUC
  - TUB, TUBE, TUC TC, TGE
  - TGE
  - ETS6-10, ETS6-14
  - ETS6-18, ETS6-25
  - ETS6-30, ETS6-32, ETS6-40, ETS12.5, ETS25

- **Controllers:**
  - Unit controller able to drive EEV directly (MCX061V)
  - Unit controller (MCX08M) with External EEV driver (EIM336, EKD316, EXD316)
HEAT PUMP
Residential
## R407C Brine to water

**Technical Data**

<table>
<thead>
<tr>
<th>Heating capacity</th>
<th>Compressor</th>
<th>Controller</th>
<th>Expansion device</th>
<th>4-way-valve**</th>
<th>Filter drier</th>
<th>Heat exchanger MPHE evaporator</th>
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<td>DML034s</td>
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</tbody>
</table>

*superheat controller built in  
**applicable only for reversible units

For rating point B0/W35: te: -3.5°C, tc: +38°C, evap SH: 1K, total SH: 5K, subcooling: 3K

## R407C Air to water

**Technical Data**

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<th>Heating capacity</th>
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<th>Expansion device</th>
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*superheat controller built in  

For rating point A7/W35: te: +2°C, tc: +38.5°C, evap SH: 1K, total SH: 5K, subcooling: 3K
### R407C Brine to water

#### Technical Data

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</table>

* + superheat controller EIM336
** + superheat controller EXD316
*** applicable only for reversible units

For rating point 80/W35: te: -3.5°C, tc: +38°C, evap SH: 1K, total SH: 5K, subcooling: 3K
R410A Brine to water
Technical Data

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<tr>
<th>Heating capacity</th>
<th>Compressor</th>
<th>Controller</th>
<th>Expansion device</th>
<th>4-way-valve***</th>
<th>Filter drier</th>
<th>Heat exchanger MPHE evaporator</th>
<th>Heat exchanger MPHE condenser</th>
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* + superheat controller EIM336
** + superheat controller EXD316
***applicable only for reversible units

For rating point B0/W35: te: -5°C, tc: +36°C, evap SH: 2K, total SH: 5K, subcooling: 5K

R410A Air to water
Technical Data

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<thead>
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* + superheat controller EIM336
** + superheat controller EXD316

HEAT PUMP COMPONENT PHILOSOPHY

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