

The most visionary hydrocarbon systems in the world

HCP-RANGE



APPLICATIONS

- Industrial processes
- Food industry
- Chillers for offices and hospitals
- Data centres
- Logistics centres
- HVAC in general

FENAGY[®]
FUTURE ENERGY SOLUTIONS

HCP-RANGE

- heat pumps, chillers and combined systems

The Fenagy HCP-range reaches capacities from 500 kW to 3,000 kW per system. The systems can be used for heat pump, chiller and combined water-water operation. The entire range is designed to deliver optimal performance in accordance with customer-specific operation needs. The HCP-range is only available as water-to-water systems, thereby ensuring a small refrigerant charge.

The HCP-range uses the natural refrigerant propane and can reach supply temperatures up to 75°C, regardless of the return temperature.

The HCP-range is typically used for industrial processes, the food industry, as chillers for offices and hospitals, data centres, logistics centres and HVAC in general. The systems can also be used as water-sourced heat pumps for district heating or heat networks and for normal water-cooled chiller applications.

HCP-1000



CAPACITY: 500-1,000 kW PU

DIMENSIONS: 2.8/3.5/1.6m

REFRIGERANT: R290

Several units can be connected in series or parallel

HCP-3000



CAPACITY: 1,500-3,000 kW PU

DIMENSIONS: 3.0/4.6/3.2m

REFRIGERANT: R290

Several units can be connected in series or parallel

Easy installation with enclosure

The HCP-range systems are always delivered in a reach-in enclosure, which is suitable for both in- and outdoor installation. The enclosure is constantly ventilated with an EX-fan, which ensures negative pressure and maintains the right temperature in the cabinet. The enclosure has insulated walls with sound dampening panels.



Enclosure HCP-1000 - seen from the back



Enclosure HCP-1000 - seen from the end



Enclosure HCP-1000 - seen from the front



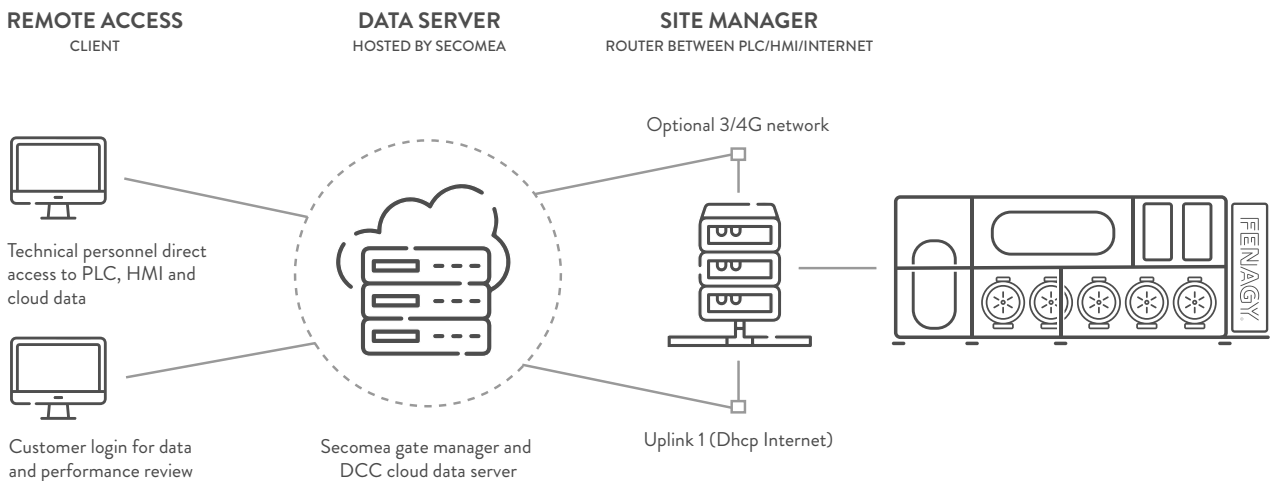
Enclosure HCP-1000 - seen from the top



Control systems

The complete range uses a standard Siemens PLC controller, and Fenagy has developed its own PLC algorithms for the most essential functions to ensure optimal control and monitoring. Our PLC solutions can communicate with most of the platforms the customer will need to communicate with. The onboard HMI panel offers direct monitoring of the system and its operating conditions. Furthermore, our PLC solutions support several communication protocols and can integrate with the overall SCADA system.

For all systems, Fenagy aspires to minimise start-up and shutdown times, enabling the system to help balance the electrical grid in a future with an increasing demand for such functions. Last, but not least, the system can deliver high supply temperatures, and Fenagy is continuously pushing the boundaries with new functions and features in the PLC development.



Technical specifications

HCP-RANGE		HCP-1000	HCP-3000
Compressor type	-	Screw	Screw
Compressors	qty	1	3
Capacity control	-	3 steps (50, 75, 100%)	Steps from 16-100%
Refrigerant charge	kg	50	3x50
Electrical supply	-	3~400V 50 Hz/3~690V 50 Hz	
Heating capacity range	kW	500-1,000	1,500-3,000
COP range	-	3.0-6.0	3.5-6.5
Dimensions (H/L/W)	m	2.8/3.5/1.6	3.0/4.6/3.2
Weight	kg	3,500	10,000
Est. sound power level (LpA)	dB(A)	?	?
Connection, hot water	DN	100	150
Connection, cold water	DN	100	150
Controller type	-	Siemens PLC	
Communication protocol	-	MODBUS / PROFINET	
Heat source/sink	-	Water/water	
Refrigerant	-	R290	
Enclosure	-	Standard for both indoor and outdoor installation	

Key features

- High-capacity screw compressor technology
- Available for heat pump and chiller applications
- Fast start and stop for balancing the electrical grid
- Industrial design with stainless steel piping
- PLC control of the entire system





We only work with natural refrigerants

R744 - CO₂

APPLICATIONS

District heating, heat networks, industrial processes, food industry, green houses, data centres, logistics centres, offices, hospitals and HVAC in general

- Natural refrigerant with a wide temperature range
- Non-toxic and non-flammable
- Excellent choice for air-sourced heat pumps for direct use in the energy collectors and with high delta T on the heat sink side
- Optimal for medium-temperature water-sourced heat pumps, chillers and combined heating and cooling applications
- Medium-high temperature level on heat sink (up to 85°C supply temp) with high delta T on the heat sink (dT: 30-40K)

R600a - Isobutane

APPLICATIONS

Heat networks, biogas, PtX, geothermal, carbon capture, CO₂ heat pump sub-cooler, industrial processes and the food industry

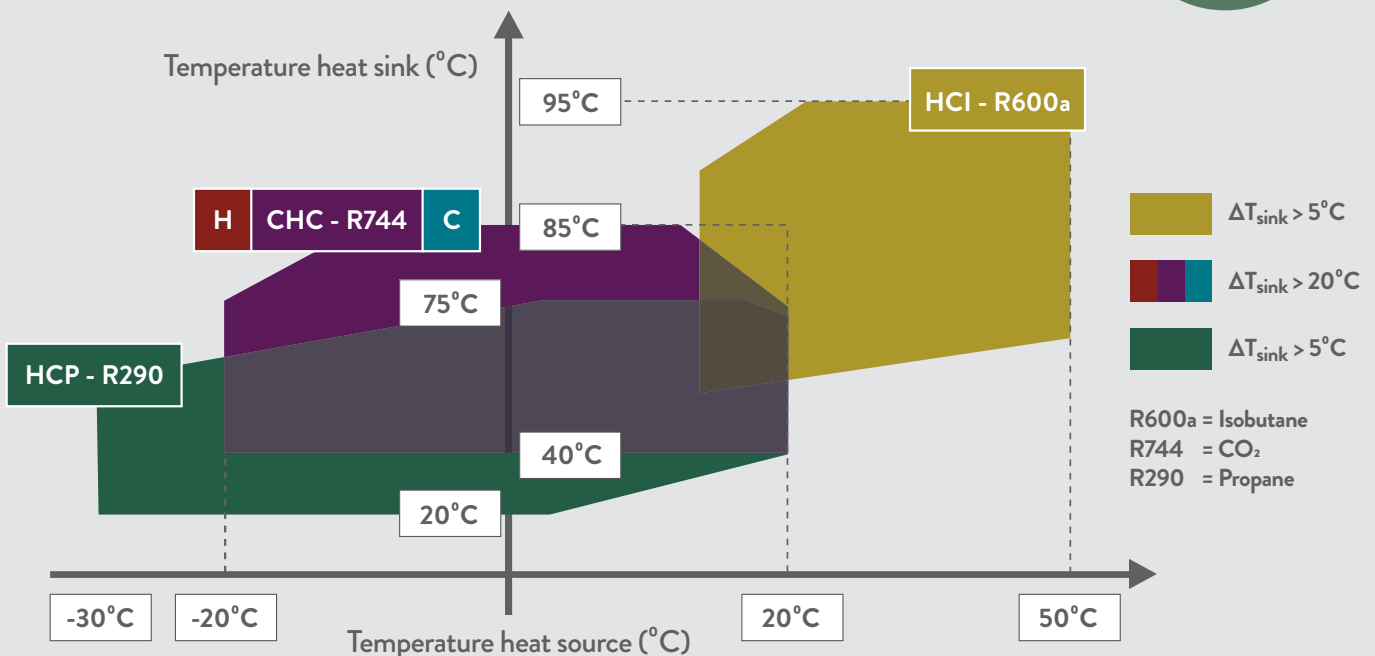
- High-temperature natural refrigerant
- Suitable for water-sourced heat pumps and chillers
- Can be used in a wide temperature range on both the heat source and heat sink sides
- Robust operation under various operating conditions
- Use of efficient screw compressors and high COP of the cycle
- High temperature level on heat source (up to 40°C evap. temp)
- High temperature level on heat sink (up to 95°C supply temp) and ideal with low delta T on heat sink - serial coupling on water side at higher delta T

R290 - Propane

APPLICATIONS

Heat networks, industrial processes, food industry, data centres, offices, hospitals and HVAC in general

- Low-temperature natural refrigerant
- Suitable for lower temperature water-sourced heat pumps and chillers
- Low temperature level on heat source (down to -30°C evap. temp)
- Medium temperature level on heat sink (up to 75°C supply temp)
- Ideal with low delta T on sink and heat source
- High refrigeration capacity ensures compact solutions with small footprint
- Can be combined with isobutane in serial hydraulic couplings



Developing and manufacturing future energy solutions

HCP-RANGE



Fenagy develops and manufactures refrigeration and heat pump systems based on the natural refrigerants CO₂ and hydrocarbons. We always use natural refrigerants because they are efficient and have no harmful effects on the environment and climate - unlike all alternative synthetic refrigerants. Natural refrigerants are the refrigerants of the future, not just in Denmark.

We are constantly developing new solutions and services that play an active role in future energy systems, based on power from renewable energy sources, such as solar and wind. This puts great demands on the power grid and thus also on electricity-consuming devices, which must be able to react fast - and this is exactly what Fenagy machines can.

We are also looking into a future where it will be legally required or a social norm not to release valuable waste heat into the environment if it can be utilised. But what about waste cooling? At Fenagy, we aim to utilise both the cooling and heating capabilities of our solutions, either separately or in combination.

Fenagy is an OEM, but also a project-oriented company that secures professional and close cooperation with our partners, from quotation to final handover of our systems to the customers.