

## QVANTUM QG Series<sup>®</sup>

### Ground source heat pump

The Quantum QG is an efficient geothermal heat pump that provides heating, cooling and domestic hot water. Due to its modular design, the QG heat pump is suitable both for single households with individual collectors as well as in low temperature grid applications, where it serves individual properties as well as multifamily dwellings.

The QG is especially developed for cold grids and common brine systems. The heat pump is inverter controlled and has an integrated buffer tank. Thanks to its light weight and easily interchangeable compressor module, it offers excellent serviceability. The inverter control automatically adjusts to the comfort demands of the home, thus minimising energy consumption.

Domestic hot water is produced instantaneously with heat from the integrated buffer tank. The buffer tank can also be used to avoid energy peak prices for both heating and hot water. The QG heat pump has a heating capacity of 6 kW or 12 kW output and supports both single- and three phase connections. The heat pump can also provide active or passive cooling. The technology behind the Quantum modular heat pump is protected by multiple patents.



System efficiency class room heating, 35/55 °C.



Product's efficiency class and load profile for hot water.



### THERMAL BATTERY

A patented new solution where the accumulator tank can be used as a thermal battery, enabling your heat pump to provide HP2G<sup>®</sup> support services to the grid.



### BUILT FOR THE FUTURE

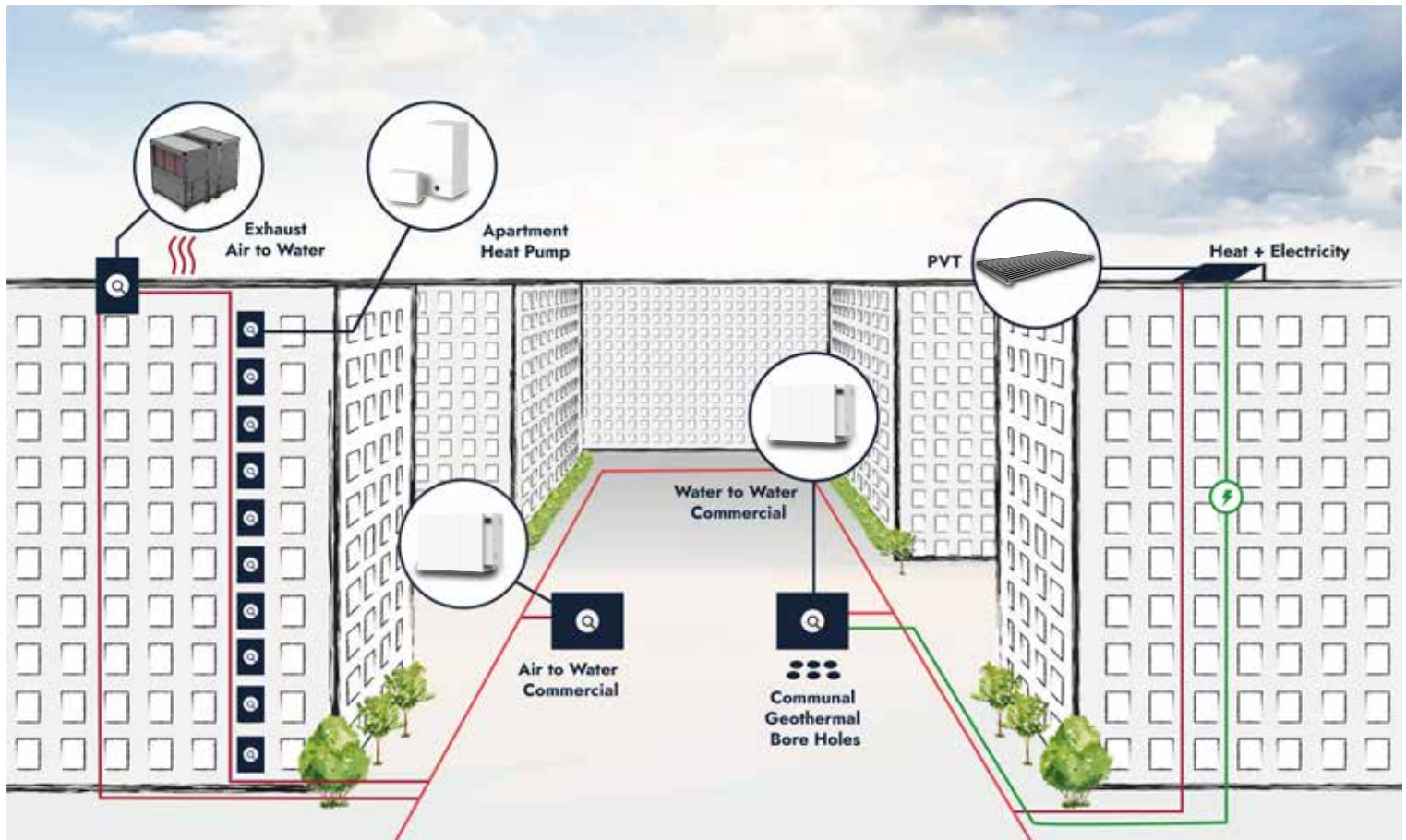
As Quantum's software develops, your heat pump will automatically be upgraded with new features.



### BALANCING SERVICES

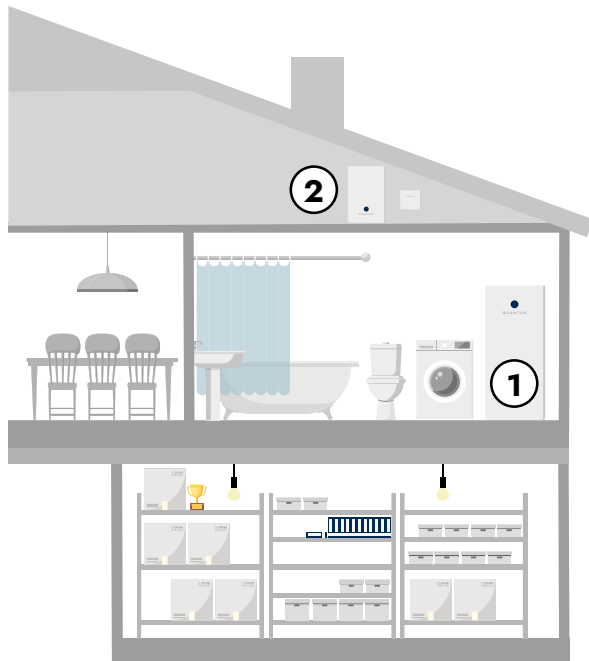
All of Quantum's residential heat pumps are prepared for the flexibility market. This means that the electricity market can purchase flexibility from its customers.





Energy Grid enabled (5GDHC)

## INSTALLATION POSSIBILITIES



Installation can be made in several different ways due to the modular concept.

- 1 Complete All-in-one installation (A).
- 2 Modular installation as separate units (M).

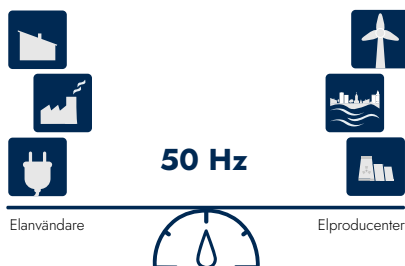
## KEY FEATURES

- Available in 6 kW and 12 kW output and inverter control to meet the comfort demands of the home.
- Low refrigerant quantity enables installation anywhere.
- Natural refrigerant R290 allows >70 °C supply flow temperature.
- Support for active cooling as standard or passive cooling as an option.
- Excellent serviceability through click-fittings and replaceable compressor modules.
- Instantaneous domestic hot water for comfort as well as efficient legionella prevention.
- Future proof connectivity.
- Dedicated app for installers and advanced users.
- Integrated buffer tank that enables true energy peak price shaving for both hot water and heating.
- Suitable for single - and three phase connections.
- Simple installation through low weight and compact dimensions.
- Modular design which enables multiple installation options.

# FUTURE PROOF

Quantum's heat pumps are prepared to adapt to the energy market and enable more utilisation of unplanned and climate-smart energy.

By using the heat pump as a thermal battery and with an AI control that responds quickly to flex market fluctuations, Quantum's heat pumps contribute to load balancing and the stabilisation of the electricity grid. By being able to use stored energy when the price is high, you don't have to sacrifice your comfort to reduce your electricity bill.



## INTEGRATED THERMAL BATTERY + FLEXREADY®

Quantum's patented system converts the hot water tank into a thermal battery. The battery has a capacity of up to 12 kWh and enables the heat pump to deliver HP2G® ancillary services to the grid.

Quantum heat pumps are all prepared for the flexibility markets of the energy market. You can then be paid to stabilise the frequency of the electricity grid, ease the load on the grid and reduce the climate impact of the electricity grid.

## ECONOMIC OPTIMISATION – eCOP®

By combining the thermal storage with intelligent control towards electricity prices, weather forecasts (*coming soon*) and expected consumption, economic optimisation is ensured eCOP®

Q charge allows you to avoid the highest hourly electricity prices and benefit from the lowest, sometimes even negative ones. The thermal battery, in combination with solar cells, increases the share of self-consumption of renewable electrons and further increases the eCOP® of the heat pump.

# INSTALLATION FLEXIBILITY

The Quantum ground source heat pump compressor module comes with 6 kW heating capacity. The system offers a range from 6kW to 12 kW in one single All-in-one unit (A), containing both the heat pump module(s) and the hydro unit.

The Quantum QG-series modular (M) design enables easy installation also in confined spaces. The heat pump module(s) are fitted after the installation of the larger hydro unit. They are equally easy to remove and replace when service is needed. If the energy consumption increases in the building, a second heat pump module can easily be added, and the capacity of your system scaled up.



PRELIMINARY TECHNICAL DATA		QG-6	QG-12
<b>Heating efficiency and capacity</b>			
Space heating efficiency class of the system 35°C / 55°C		A+++/A+++	
Space heating efficiency class 35°C / 55°C		A+++/A+++	
SCOP <sub>EN14825</sub> average climate, 35°C / 55°C		4,4/3,8	
Nominal heating output <sub>(P<sub>designh</sub>)</sub>	kW	6	12
Operational range source side, GSHP/Cold grid*		-10–40 / 10–40	
Operational range sink side		25–75	
<b>Electrical data</b>			
Rated voltage	V	400V 3N ~ 50Hz / 230V 1N ~ 50Hz / 230V 2N ~ 50Hz	
Max power immersion heater	kW	5.0 kW (three steps)	
<b>Sound</b>			
Sound effect level <sub>EN12102</sub> (LWA)	dB(A)	36–43	
<b>Hot water efficiency and capacity</b>			
Amount of hot water (40°C) <sub>EN16147</sub>	l	235	265
Efficiency class hot water heating / declared tap profile		A+/XL	
<b>Refrigerant circuit</b>			
Type of refrigerant (GWP)		R290 (3)	
CO <sub>2</sub> -equivalent	kg	0,456	
Refrigerant quantity	g	152	2 x 152
<b>Weight and dimensions</b>			
Dimensions (WxDxH)	mm	600 x 600 x 1 595	
Weight	kg	145	175

\* GSHP applications use water mixed with an antifreeze liquid as brine. Cold grid applications use water as source.

## ACCESSORIES



### SINGLE MODULE COMPLEMENT

Scale as your needs grow/change, increase the heating capacity by adding a single compressor unit. If a house expansion or pool is added to the property, an extra compressor unit ensures that the heating requirements are fulfilled.

# More than just a HEATPUMP

Quantum is a Swedish heat pump company that has been manufacturing customised industrial heat pumps since its beginning in 1993.

Since 2022, we also develop products for the residential market, with production in Åstorp outside Helsingborg. Quantum not only offers new heat pumps, but we also present the start of a completely new heat pump approach.

## QVANTUM

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