

# CASCADE MANAGER



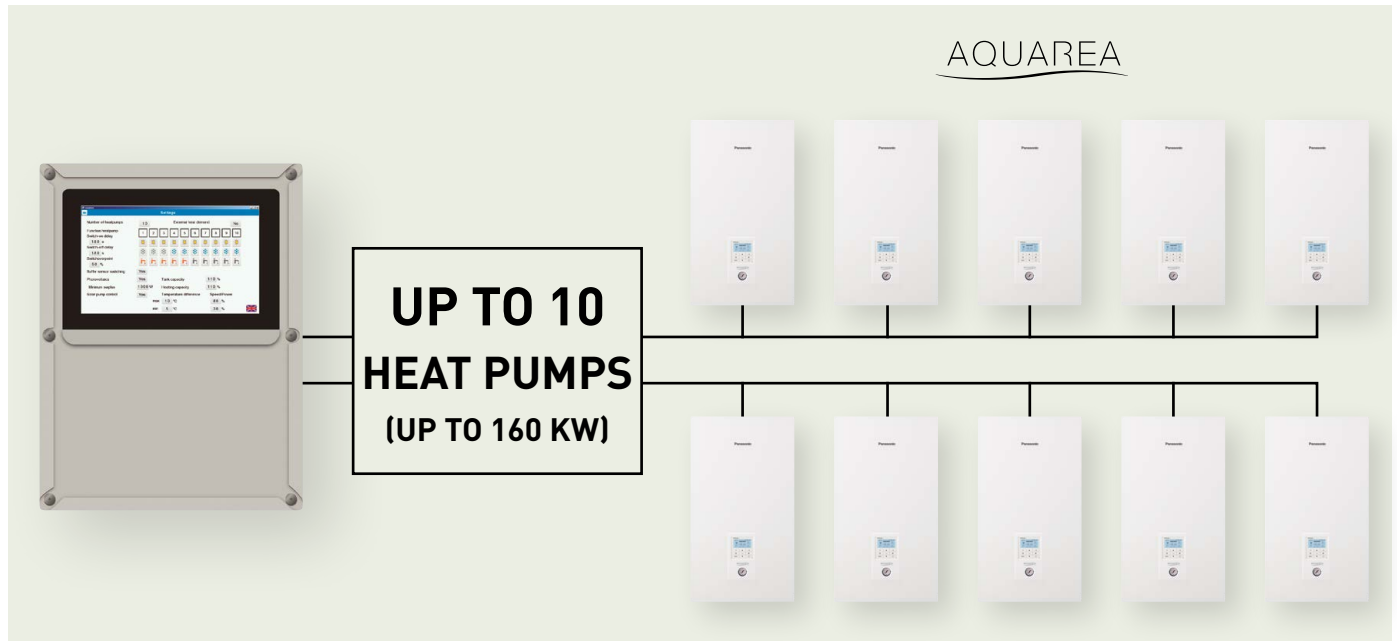
## Provides Control for up to 160 kW or 10 Aquarea Heat Pumps

- Manages the heat demand based on a PID logic, balancing working hours
- Designed for small hotels, supermarkets, restaurants etc., and central heating projects
- Large, easy-to-use touch screen display
- Built in MODBUS IP for BMS integration



# Aquarea Heat pumps Cascade

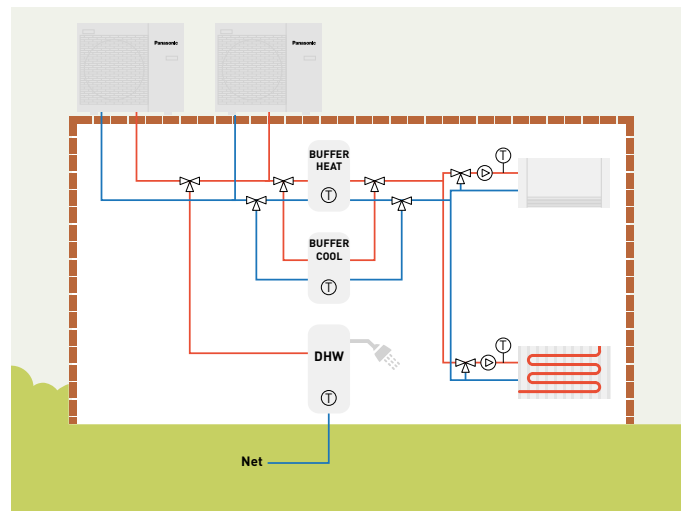
Premises across the world require efficient heating and cooling systems with the capability for remote monitoring, control and maintenance in a variety of applications. The Cascade Manager is a highly integrated interface which allows for establishments such as supermarkets, hospitals, care homes and hotels to control up to ten Aquarea Heat Pumps to remotely manage the demands for energy-efficient heating and cooling across their organisations.



## PAW-A2W-CMH. Cascade Manager

- Cascade up to 10 heat pumps, getting up to 160 kW
- Manages the heat demand based on a PID logic, balancing working hours
- Can control 3 way valves for cooling (2 buffer tanks)
- Modbus IP for BMS communication
- DHW control logic
- Large, easy-to-use touch screen display, with information about the heat pump
- All components in one case
- Compatible with Aquarea heat pumps, J or H generation\*.

\* Requires 1 PAW-AW-MBS-H per each Aquarea.



\* Requires 1 PAW-AW-MBS-H per each Aquarea heat pump

The Cascade Manager has a large, easy-to-use touch screen display and provides control for up to 10 Aquarea air-to-water heat pumps, to run simultaneously or in cascade mode and creating a system with capacity up to 160kW.

The Cascade Manager for Aquarea heat pumps manages the heat demand using a PID logic, balancing the working hours of all heat pumps and maximising the performance of the heat pumps.

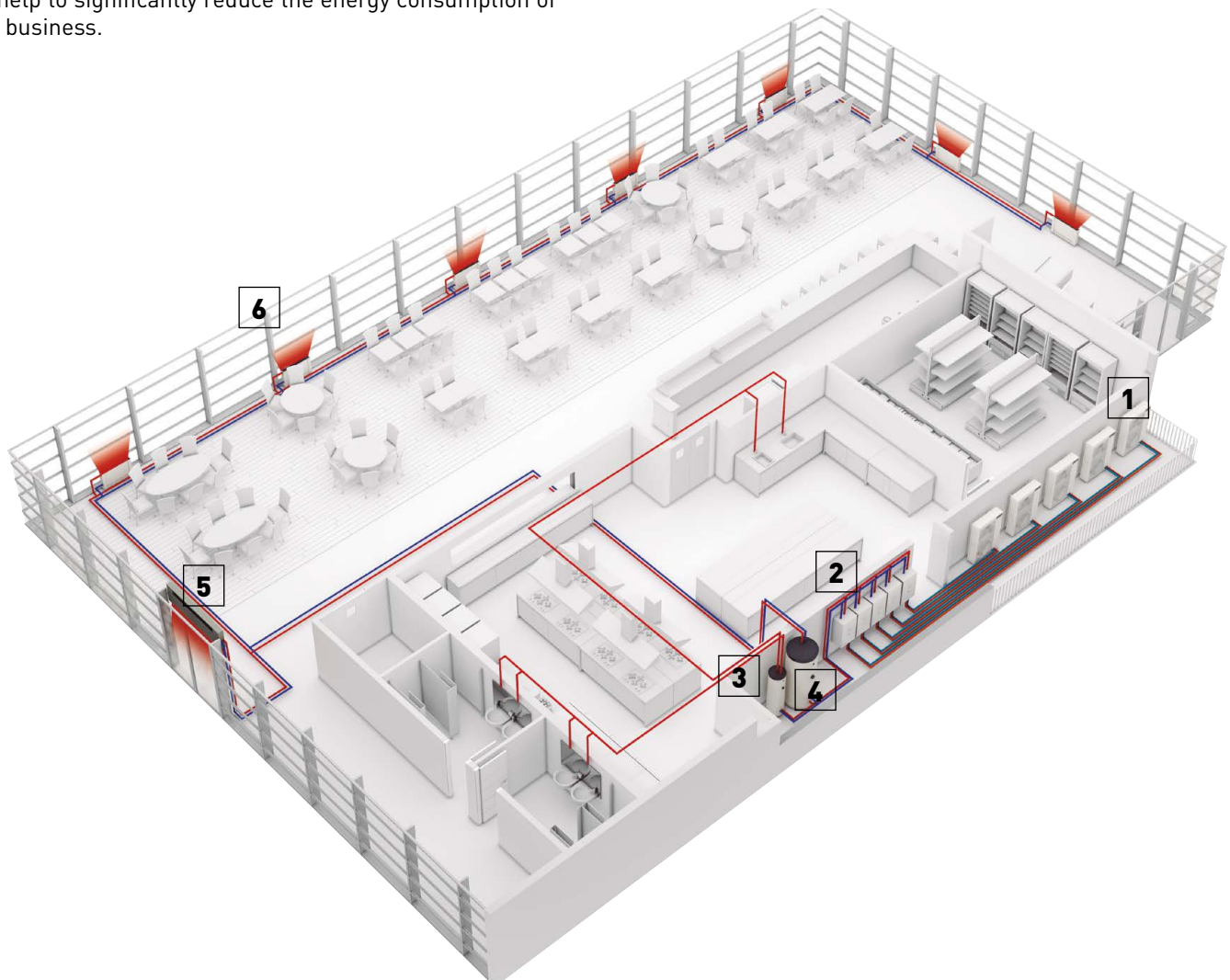
It is ideally suited for residential -p.eg. central heating installations- and small commercial and hospitality applications. With its own built-in MODBUS IP, the Cascade Manager can be integrated in the building's BMS.

Model name	Interface
PAW-AW-MBS-H	Modbus Interface for J and H Generation
PAW-A2W-CMH	Cascade
CZ-NS4P	PCB for advanced functions in J and H Generation



**Aquarea commercial. Restaurant with Aquarea.**

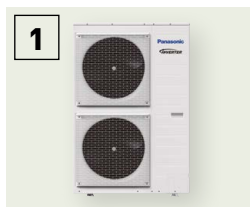
Solutions for best savings. Efficient Panasonic heat pumps can help to significantly reduce the energy consumption of your business.



**Cascade manager.**  
The Cascade manager enables the control of up to 10 Aquarea Heat Pumps (balancing the working hours and making the operation more efficient) and up to 2 buffer tanks.



**BMS integration.**  
The cascade system can be easily integrated in a Modbus project thanks to the Cascade manager.



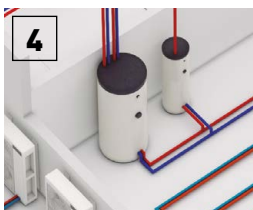
**Aquarea T-CAP.**  
16 kW heat pumps on cascade mode. T-CAP line-up is an ideal replacement for old gas/oil boilers.



**High efficiency Aquarea T-CAP hydromodule.**  
Indoor unit of Aquarea Bi-bloc systems. When a Mono-bloc system is used, the hydromodule is integrated in the outdoor unit.



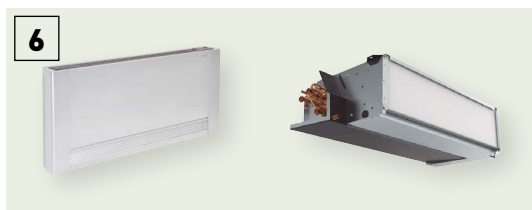
**Super high efficiency Tanks.**  
Combining Panasonic Aquarea with a high efficiency tank ensures the desired volume of hot water, at the correct temperature while reduced energy costs.



**Buffer Tank.**  
Panasonic Aquarea can be combined with the hydraulic elements of the new or existing water system.



**Air Curtain with water Coil.**  
Water coil air curtains can be used in the hydraulic system to have efficient performance of the water system.



**Fan coils for heating and cooling.**  
Aquarea Heat Pumps can be easily connected to the existing water system: 2 way and 4 way fan coils, floor heating, DHW tanks...

## Case Studies

For many projects, energy, cost, and time efficiency is key to creating a more sustainable building and reducing heating and cooling costs. Cascade Manager is being increasingly utilised across many sectors to make use of parallel-connected heat pumps and maximise the performance of the heating system.



### 27- apartment condominium, Hungary

A 27-apartment condominium in Szeged, Hungary, installed 3 Panasonic Aquarea T-CAP 16kW in cascade to individually provide heating, cooling and DHW to each property. Optimising energy consumption, the systems use a Cascade Manager to control the heat pumps depending on availability. Each apartment is charged based on consumption meters. The installation also includes a buffer tank and a common DHW tank

### Karolina Kindergarten, Hungary

Karolina Kindergarten, Hungary, installed 6 Aquarea T-CAP heat pumps in cascade to ensure the comfort of its children and staff with reliable operation and stable DHW production in summer and winter. The solution is controlled by a Cascade Manager to optimise the operation of the system in order to meet the demands of the building.



### Healthcare facility, UK

An example is a recent project in the UK – a healthcare facility where six highly efficient Panasonic Aquarea H Series T-Cap 16kW Air to Water heat pumps, along with a Cascade Manager, have been installed to provide underfloor heating to 2022 m<sup>2</sup> of floor space within the building. This brand new €10m modern facility houses 15 in-patient rooms with en-suite facilities for those with life limiting conditions, several treatment rooms for out-patient clinics and multidisciplinary specialist services. The Care Home is benefiting from the Cascade Manager which modulates the air source heat pumps to meet demand and further save on energy usage.

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