Ecodan QUHZ | Crib Sheet

Ecodan QUHZ

A quick guide to **When and Why** you should specify installation of an Ecodan QUHZ

MITSUBISHI ELECTRIC

ecodan®
Renewable Heating Technology

Ecodan QUHZ | Crib Sheet 1

QUHZ vs. PUHZ - When and Why

When to apply QUHZ

- ✔ New Build/Retrofit dwellings, Residential/Commercial applications
- ✔ Applications with up to 4.5kW heat load*
- ✔ Applications requiring heating and hot water or hot water only**
- ✔ 70°C max flow temperature for DHW. 60°C max for space heating
- ✔ Coastal application requires third party protection to be applied (See Crib Sheet 2 for details)

Why you should apply QUHZ

- ✔ QUHZ is more efficient than the PUHZ when generating DHW
- ✔ Up to 18 l/min DHW flow rate – better than many combi boilers!
- ✔ Instantaneous DHW generation - Legionella no longer an issue!
- ✔ V. low noise - quietest on the market! 53dBA Sound Power Level. 43dbA at 1m Sound Pressure Level. Product placement flexibility
- ✔ Small compact size - looks good, unobtrusive, can be floor, wall and roof mounted
- ✔ Simple power arrangements - indoor unit powers outdoor unit (20A MCB)
- ✔ Supplied condensate drain set - can drain condensate easily
- ✔ Can stack units one above the other - required clearance is 100mm
- ✔ Small pipework sizes - minimum 15mm primary pipework, micro-bore (10mm) heating distribution pipework is possible
- ✔ Mitsubishi wireless thermostats recommended to take full advantage of auto adaption mode. Pre-sales technical advice available regarding third party controls
- ✔ Lowest capacity turn-down of any Ecodan unit - minimised cycling under low load conditions
- ✔ Only heating circuit expansion vessel is required (MEU-UK supply 25L) - more cupboard space available!
- ✔ Only one circulation pump is required (MEU-UK supplied) - no additional third party pumps required
- ✔ There is no reason why the QUHZ should be substituted by the PUHZ if the system design is right

When to apply PUHZ instead of QUHZ

- ✖ Heating only - QUHZ **must** be paired with the 200L indoor unit and therefore would not be a cost effective solution for a heating only system
- ✖ See Crib Sheet 2 regarding the vertical distance restriction between QUHZ and Thermal Store
- ✖ Applications with heating flow rate distribution higher than 8 l/min

* -7°C design ambient temperature, 7 l/min, 40°C/30°C flow and return temperatures

** Maximum 250L design equivalent

Ecodan QUHZ Crib Sheet 2

UFH Guide

If a UFH system is designed according to the QUHZ conditions, there will be no problem integrating with the QUHZ system.

Please ask the customer or customers UFH designer to speak to Pre-Sales regarding integration of QUHZ and UFH.

Key Design considerations:

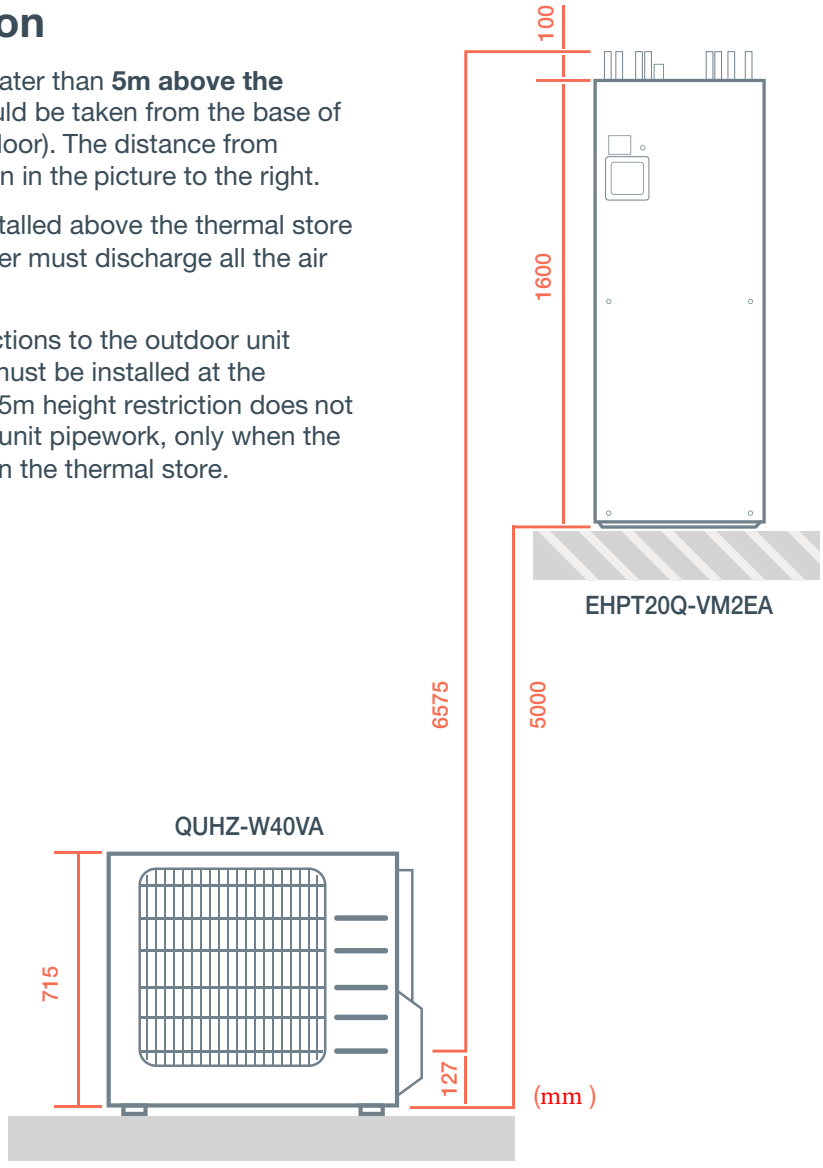
- The flow rate range of the QUHZ is 3-8 l/min, the lower the design flow rate, the better for COP (efficiency)
- **7 l/min and 40°C/30°C flow and return temperatures (MWT = 35°C) are the sweet spot (QUHZ conditions) to promote easy UFH design. 4.52kW capacity is achievable at these conditions**
- **If higher flow temperature is required for UFH design; consider subsequent reduction in design flow rate. E.g. 4l/min and 50°C/32°C flow and return temperatures (MWT = 41°C). 4.90kW capacity is achievable at these conditions**
- Third party thermostats (typical in UFH) will mean QUHZ flow rate has to be fixed - auto adaption mode is not possible
- No additional pumps allowed on the system - therefore UFH manifolds must be non-pumped

Vertical Height Restriction

The thermal store cannot be installed greater than **5m above the outdoor unit.** The 5m measurement should be taken from the base of the unit to the base of the store (floor to floor). The distance from connection to connection is 6.5m, as seen in the picture to the right.

In instances where the QUHZ is to be installed above the thermal store (reverse of picture to the right); the installer must discharge all the air from the outdoor unit pipework.

There are manual air vents on the connections to the outdoor unit (see picture below). Automatic air vents must be installed at the highest point of the primary system. The 5m height restriction does not apply if all air is vented from the outdoor unit pipework, only when the QUHZ outdoor unit is installed higher than the thermal store.



QUHZ Manual air vents

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Maximum interconnecting pipe and cable length

15m is the maximum distance allowable between indoor and outdoor unit. This is due to EMC testing.

Secondary Hot Water Recirculation

Technically this is possible but will disrupt the stratification layer in the thermal store and can therefore compromise the efficiency of the QUHZ.

Coastal Protection

Consider Blygold or equivalent treatment - provide statement to customer:
"For Saline Treatment of unit: Please call Blygold direct for prices on **01895 259346**."
Refer to coastal protection PI sheet for details of when to apply.

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Changes for the Better

Telephone: 01707 278666
email: heating@meuk.mee.com
web: heating.mitsubishielectric.co.uk

UNITED KINGDOM Mitsubishi Electric Europe Living Environment Systems Division
Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England General Enquiries Telephone: 01707 282880 Fax: 01707 278881

IRELAND Mitsubishi Electric Europe Westgate Business Park, Ballymount, Dublin 24, Ireland
Telephone: Dublin (01) 419 8800 Fax: Dublin (01) 419 8890 International code: (003531)

Note: Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774) or R134a (GWP:1430). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP: 550), R407C (GWP:1650) or R134a (GWP:1300).

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