

Q-TON HIGH PERFORMANCE



Q-ton is a system that uses renewable air-thermal energy for significant energy and consumption savings.

HIGH PERFORMANCE

- It is particularly suitable for the production of DHW at cold outdoor temperatures, down to -25° C.
- It can produce mixed DHW at 45°C up to 17,000 litres/day, or at 90°C without mixing.
- Maintains nominal power output down to -7° C.

RESPONSIBLE FOR THE ENVIRONMENT

- Minimizes the environmental impact thanks to the low GWP value = 1, with CO2 refrigerant.
- ODP (ozone destruction coefficient) equal to zero.

TOP EFFICIENCY

- The highest energy efficiency coefficient in the sector in DHW production mode (rated COP 4.3).
- Maximum reduction in management costs.

FLEXIBILITY & RELIABILITY

- It is modular up to 16 units.
- High quality, durable internal components.
- It boasts extreme versatility of use and easy operation and maintenance.

OPERATION IS JUST A CLICK AWAY

- Touch screen control panel, with user friendly graphics.
- Possibility of sending notifications via MODBUS communication with the interface RCI-MDQE2.



Operation limit



DHW liters per day



100% nominal yield down to -7° C



DHW temperature without mixing



Global Warming Potential minimo



Ozone Depletion Potential zero



High efficiency



Maximum energy efficiency coefficient in DHW



Connectable Q-ton outdoor units



Q-TON

DHW FROM FREE NATURAL ENERGY


Q-ton systems are the only ones on the market that use R744 gas capable of working on low temperature heating systems and having a seasonal energy efficiency class of A+. These systems, being ECO friendly, are attentive to the possible risks associated with the introduction of climate-altering gases into the atmosphere and, in order to avoid the possible leakage of gas, are equipped with leak control sensors.

R744

REFRIGERANT
GAS R744 (CO₂)

90°C

DOMESTIC
HOT WATER
PRODUCTION
UP TO 90°C

 HEAT PUMP KEYMARK
Certificate of Approval for the Heat
Pump KEYMARK Scheme

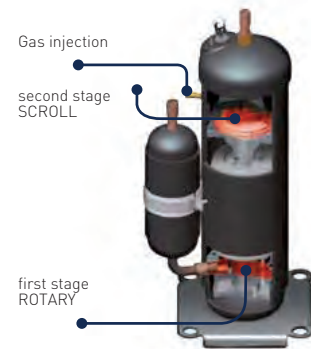
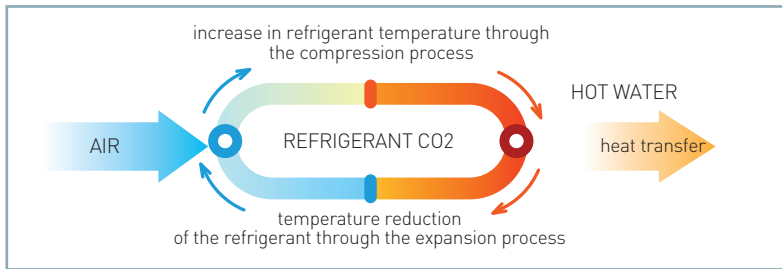


DOMESTIC HOT WATER

Q-TON - CO2 HEAT PUMPS

GRS two-stage compressor

Q-ton, thanks to the action of the two-stage compressor, allows you to produce a high quantity of energy for heating or for the production of domestic hot water. The nominal thermal power generated is stable and constant even as the external temperature decreases.



LCD touch panel

The management and main parameters of the system can be controlled both from the LCD wire control and remotely via MODBUS protocols. The system allows, via the wired control, to independently select the system's operating priority (heating or domestic hot water).

The circuit flow temperatures can be set either fixedly or by selecting the climatic curve.



EASY TO USE

LCD panel with illuminated buttons.
Large 2.8 inch display.
Backlight.



SCHEDULING

It is possible to carry out daily, weekly and annual programming.



PEAK-CUT TIMER

Possibility of setting a DHW production schedule based on peak demand.



THE TANK

It is always possible to manually fill the tank.



DAYLIGHT UPDATE

The system automatically adapts to daylight saving time allowing easy programming.



CLIMATE CURVE

In heating mode, it is possible to set a customizable climate curve that automatically determines the flow temperature based on outdoor temperature conditions.

RC-Q1EH2 FOR Q-TON



DOMESTIC HOT WATER

Q-TON - DOMESTIC HOT WATER PRODUCTION

Q-ton heat pumps absorb “free” heat from the outside air and amplify it to generate hot water quickly and efficiently, up to 90°C, without the need for additional electrical resistance.

They reduce operating costs and carbon emissions by 40 to 75% compared to a traditional system. They are suitable for installation in new buildings and do not require a backup system for heating. In existing buildings, with traditional heating systems, they are applicable only in the domestic hot water production function.



DOMESTIC HOT WATER

The installation of a Q-ton system is ideal for replacing old heating systems such as boilers, because it produces DHW based on the actual capacity required by the user.

PERFORMANCE

Operation down to -25° C outdoors

With DHW production up to 90° C

YIELD

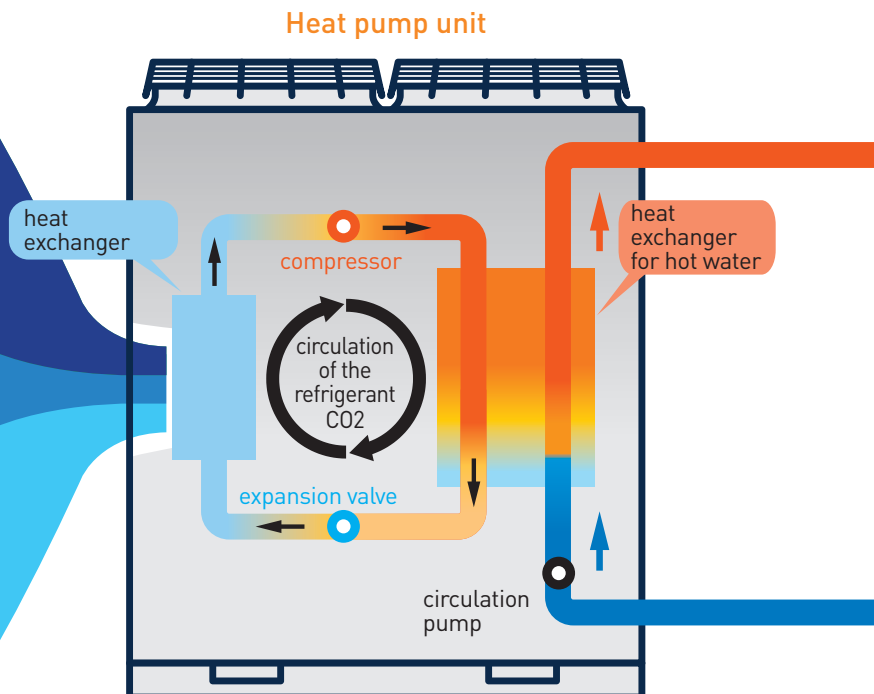
100% down to -7° C

Maintenance of nominal power output at 100% down to -7° C

EFFICIENCY

COP 4.3

The highest value on the market



90°C

Reachable temperature

16

Connectable outdoor units

480

The maximum modular power in kW

HOW DOES IT WORK

Q-ton systems use a cold refrigerant coil that absorbs heat from the outside air and, using the unique 2-stage compressor, compresses the refrigerant to increase its temperature. The heat exchanger then uses the heat generated to produce domestic hot water.

POWER AND DESIGN FLEXIBILITY

It is possible to manage up to 16 outdoor units by using a single control. The maximum power that can be achieved by a combined system is 480 kW. These powers make the installation of a Q-ton system suitable in large newly built condominiums, or in super-condominiums with district heating systems pre-existing.

SENSORS IN TANKS

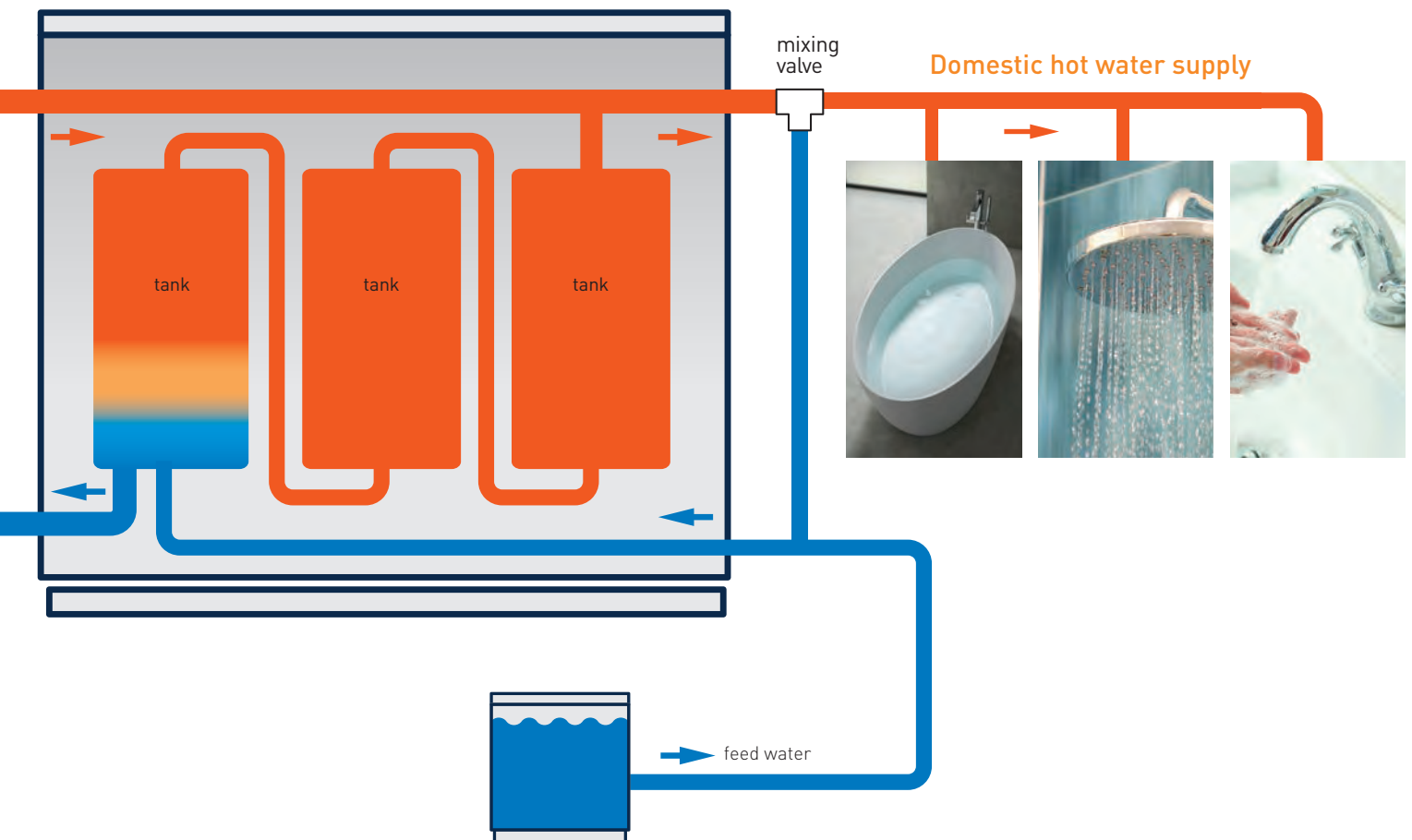
Each storage tank has five compartments in which temperature sensors can be inserted to detect the volume (in %) of hot water contained in the tank at a given time.

PROGRAMMING

The programming of the control system is made to maintain specific volumes of hot water at different times of the day, based on the user's needs.

REDUCED COSTS

Further savings for the user are given by the possibility of heating and storing water during times when electricity rates are lower.



DOMESTIC HOT WATER

Q-TON DHW

16 UNITS CONTROLLED BY A SINGLE DEVICE

Up to 480 kW of capacity by connecting 16 units of 30 kW each.

The extremely flexible modular configuration allows the installation of Q-ton DHW production, adapting the power of the system to different application contexts. The entire system can be managed from a single control device.



Depending on the applications and installation needs, a module from 30 kW it can produce 17,000 liters of DHW per day.

Model		ESA30EH2-25	
Nominal data	Power output (DHW production)		30
	Power input	A16/W65 ¹	7.0
	Performance coefficient		COP 4.30
Seasonal data	Test cycle profile		XXL
	Energy efficiency (nwh)		114
	Energy efficiency class		A
	Annual energy consumption		kWh/y 1909
Operating range	Outdoor air temperature		°C -25~43
	Delivery water temperature		60~90
Refrigerant circuit data	Refrigerant	type (GWP)	R744 (1)
	Quantity (tons CO2)	kg (t)	8.5 (0.00)
	Compressor	type	Double stage - DC Inverter
Hydraulic data	Heat exchanger	type	Shell and tube
	Circulation pump	Static pressure	m (kPa) 5 m (49 kPa) @ 17L/min
	Water connections	Size	Inches 3/4" (DN20)
	Operating pressure	Min/Max	bar 1/5
	Power supply		Ph-V-Hz 3Ph-380~415V-50Hz
Electrical data	Maximum current	A	21
	Power cable (recommended)	type	5x6 mm ²
Product specifications	Fan	Air flow	m ³ /h 15600
		Static pressure	Pa 50
	Sound power level		dB(A) 70
	Dimensions	LxDxH	mm 1350x720x1690
	Weight	Net	kg 375
Controls	Wired control	Not included	RC-Q1EH2
	Modbus	Optional	RCI-MDQE2

The data reported above refers to the following standards: EN 14511:2018; EN 14825:2019; EN50564:2011; EN12102-1:2018; EN12102-2:2019; [EU]No:811:2013; [EU]No:813:2013; OJ 2014/C 207/02:2014.1. Water conditions: inlet 17° C, outlet 65° C.

INTERFACE

M-ACCESS

RM-CGW-E1

Management interface via M-ACCESS: this is a remote monitoring system for MHI products that adopts Cloud-type Gateway equipment and which allows centralized management of air conditioning and **DHW production** systems from multiple remote locations using the Internet of Things (IoT).

You can easily monitor and manage the status of external and internal drives via the Internet using, for example, a PC or tablet.

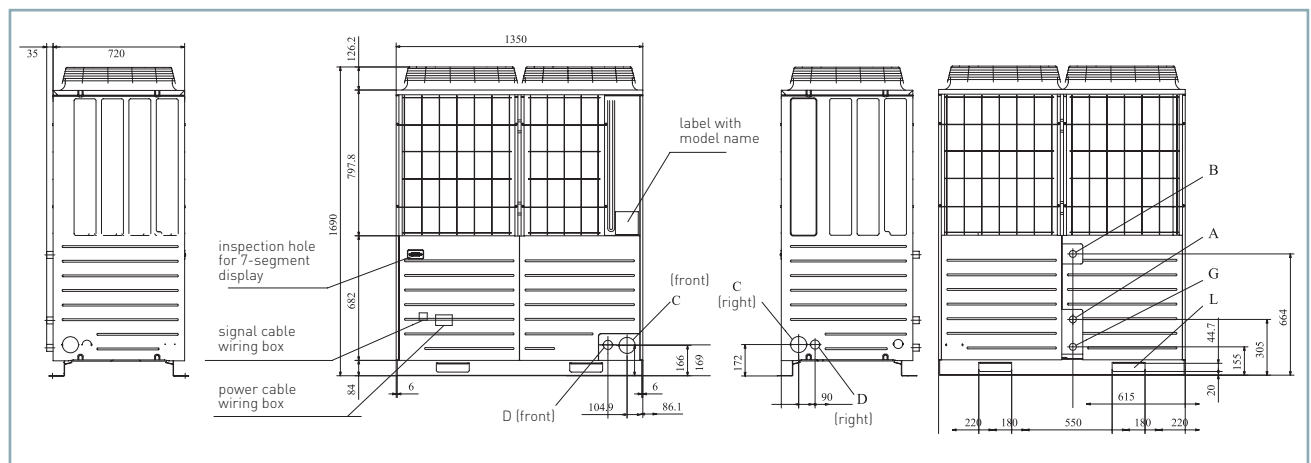
Some of the available functions are as follows:

- Real-time monitoring of machines.
- Management of operating parameters (on/off, mode, temperature and fan speed).
- Electricity consumption and alarm notifications via email.

All MHI residential, commercial, VRF and Q-ton products (with the necessary interface cards) can be connected to this new and innovative system.



ESA30EH2-25 DIAGRAMS AND DIMENSIONS



Item	Description	Description
A	Water inlet	RC 3/4 (copper tube 20A)
B	Hot water outlet	RC 3/4 (copper tube 20A)
C	Connection lines' output between the heat pump and the tank	0 88 (or 0 100)
D	Power cables' input	0 50 (right, front) lower hole 40x80
G	Waste water pipe outlet	RC 3/4 (copper tube 20A)
L	Opening for movement	180x44.7