RVR ENERGY TECHNOLOGY

DOMESTIC HEAT PUMPS

TECHNICAL CATALOGUE

Q1/Q2 2023

IMMERGAS

MITSUBISHI ELECTRIC

About RVR Energy Technology

In the mid 1970s, Pioneer Radiant began manufacturing gas-fired radiant heaters in a factory at Bonane near Kenmare, Co. Kerry. Pioneer became Re-verber-ray in the 1980s which in turn became RVR in the 1990s.

From houses to churches, hospitals to schools, apartments to aircraft hangars, we have supplied heating equipment for every type of Irish building.

Whether the project requires a small number of kW, multiple MW, or anything in between, we have a solution. We have been delivering successful heating projects for over 40 years.

Above: Giant AHU at Shannon Aerospace Hangar, 1990s

What we do

Our aim is to accelerate a sustainable future for heating & cooling in Irish buildings. Our heat pumps heat homes, schools, hospitals, hotels, leisure centres and more.

We pride ourselves on our pre-sales support, high level of technical competence and strong customer care.

We firmly believe that technical excellence is essential in establishing the next phase of energy use in our homes, public buildings and commercial locations. We don't believe short-cuts should be taken.

Above: Commercial heat pumps at a Kilkenny healthcare centre, 2021

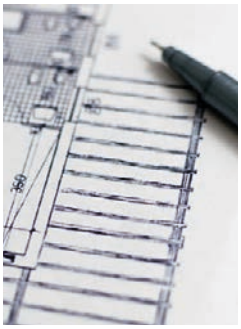
How we can help

The vast majority of new homes are now heated using an air/water heat pump and a large volume of retrofits are likely in years to come. In both cases, there are significant technical and/or regulatory hurdles to be overcome.

We aim to assist the installer in overcoming these issues. Before the project begins, an assessment of the building's needs must be made.

The heating system in **new houses or apartments** can be designed from the plans so the ideal system and heat emitters can be chosen at design time.

Existing homes



A Technical Assessment must be carried out by a SEAI registered Technical Assessor. Insulation may need improvement before project commencement.

The existing hydraulic system must be checked (layout, flow-rate and volume (defrost)). Capacity of the heat emitters (radiators) and hot water cylinder must be checked to ensure they are suitable for use with a heat pump. The electrical supply must also be checked.

Calculation of heat pump capacity, room heat loss and emitter output must be carried out and an equipment selection must be made.

The homeowner's data and information about the technical assessment must be gathered and uploaded to apply for the SEAI grant. All going well, a graft is offered.

Installation

At this point, the installation can proceed.

- RVR will deliver all equipment directly to site on a day of your choosing
- The heat pump must be mounted and piped into the home.
- The cylinder and/or radiators may need to be replaced (if necessary).
- An electrical supply must be brought to the heat pump.
- Controls must be installed and connected to the system
- An F-Gas registered technician must charge the refrigerant pipework (if split)
- The system must be filled and bled and the heat pump is commissioned.

Above: Mitsubishi Ecodan installation, 2021

Post-Works

Once the works have been completed, a follow up BER must be carried out. Then the installer or designer must certify the works (a checklist is completed) and substantial documentation must be submitted to the SEAI. This includes *Declaration of Works forms, Installer Sign-off forms, Commissioning certificate, RECI certificate, Eco-Design fiches, Warranty information, post-works BER Cert .*

We can help you navigate the regulatory and technical minefields.

RVR Energy Technology can design a suitable system, provide the relevant documentation, and for a small fee can administer the grant or building compliance process, leaving you free to concentrate on growing your business.

We are able to provide a customised proposal per project with a quick turnaround.

Why not try us on a project today to see how we can make your life easier?

RVR Energy Technology Ltd, Kenmare, Co. Kerry – +353 (0) 64 6689522 – info@rvr.ie

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Immergas Magis M Monobloc

The Immergas Magis M is a monobloc air to water heat pump. It is ideal for use in both new-build and retro-fit applications in houses and apartments (single phase up to 16kW) and light commercial applications (three phase up to 30kW).

The Magis M is a great solution as it can manage up to two heating zones while providing automatic hot water using a three valve (simply connect thermostats and hot water sensor).

The Magis M may also be installed with a Magis Wiring Centre, which allows the use of up to three zones plus hot water via a standard two port valve. This can be a great solution where the existing cylinder is not plumbed separately to the main heating circuit.

The Magis M includes an in-built circulation pump and stylish remote control panel. These can be costly additions on many other monobloc heat pumps.

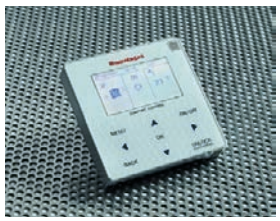
Features:

- Modulating twin rotary compressor offers excellent efficiency
- Variable speed fan(s) minimise sound levels
- Water flow temperature up to 60ºC
- Operates with outside temperatures as low as -20ºC
- Weather Compensation and hot water priority as standard
- ErP compliant low energy circulation pump
- Built in expansion vessel and safety valve
- Comes with DHW sensor, water Y filter, condensate drain fittings
- Low maintenance and quiet operation
- May be used in a hybrid configuration with conventional boilers
- R32 refrigerant

35°C A+++ 55°C A++

Immergas Magis M Heat Pumps include an attractive and full featured remote controller which is mounted indoors for ease of use. The remote controller provides an easy-to-use graphical interface to manage the operation of the heat pump. Up to two heating zones may be connected directly to the Magis M (thermostats or chronostats plus zone valves or pumps). Hot water may also be controlled by the Magis M via a three way valve and a temperature sensor.

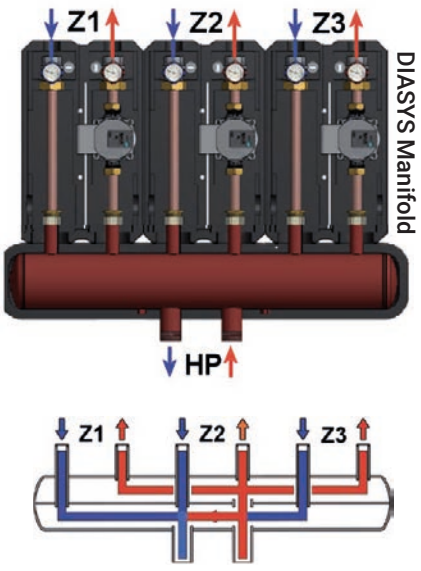
Magis M	Heat Pump H x W x D mm	Weight kg Empty	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Refrigerant
Magis M 4	792 X 1295 X 429	86	1"	55	12	16	R32
Magis M 6	792 X 1295 X 429	86	1"	58	14	20	R32
Magis M 8	945 X 1385 X 526	105	1"	59	16	20	R32
Magis M 12	945 X 1385 X 526	129	1"	65	25	32	R32
Magis M 14	945 X 1385 X 526	129	1"	65	26	32	R32
Magis M 16	945 X 1385 X 526	129	1"	68	27	32	R32



Magis M Remote Panel

We recommend using a three way valve for hot water along with a DIASYS manifold for pumped heating zones. The DIASYS is a combination hydraulic separator and disribution manifold. A direct pump module is installed for each zone, comprising of pump, isolation valves and thermometers. A high quality EPP insulation shell is included (30kg/m3 density)

- Minimises restriction of flowrate on the primary circuit - important for heat pumps
- Overcomes the limitations of small bore radiator pipework (pump per zone)
- Allows different flowrates on the primary and secondary heating circuits
- Maximises the system water volume available for defrost

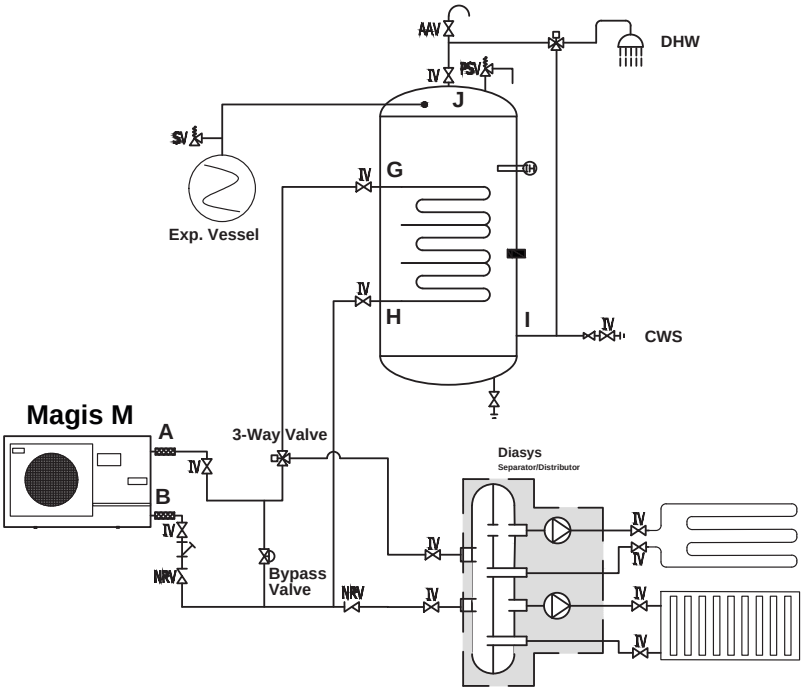


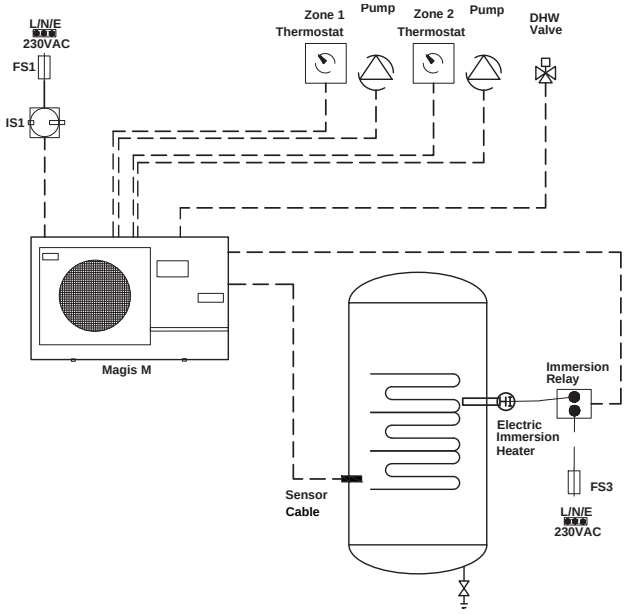
	Manifold H x W x D mm (excl insulation)	Each pump module H x W x D mm (incl insulation)	Primary Connections	Secondary Connections	Manifold empty weight (excl insulation)	Each pump module empty weight (incl insulation)
2 Zone	244 x 535 x 125	415 x 250 x 200	1 1/4"	1"	10 kg	6 kg
3 Zone	244 x 785 x 125	415 x 250 x 200	1 1/4"	1"	13 kg	6 kg

Typical installation - New Build or Retro Fit ▼

For new build homes and where possible during retro-fit, we recommend a three way valve for hot water priority along with a DIASYS header for pumped heating zones.

An example of a two zone plus hot water arrangement is shown below.





System Min. Water Quantity	6 Litres per kW
System Flow Rates	6.7l/min + (4-6-8) / 11.7l/min+ (12-14-16)

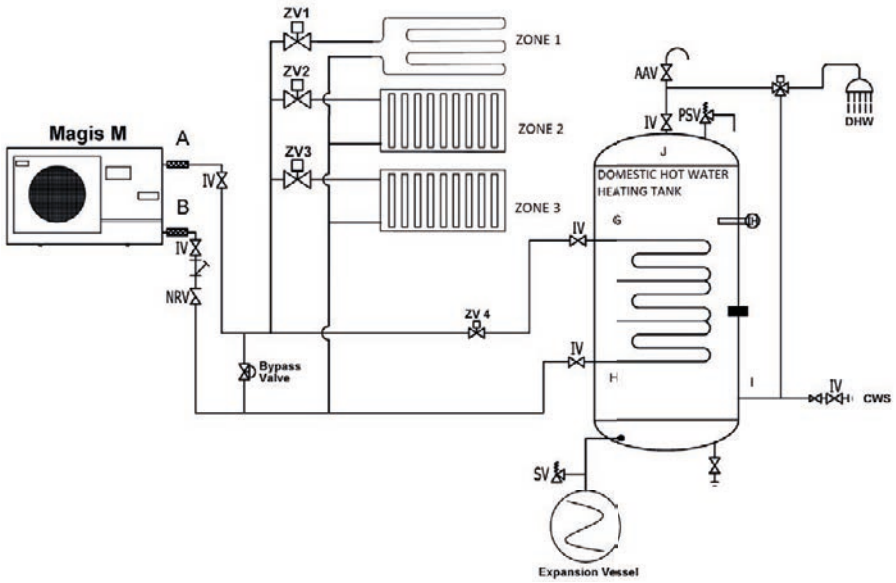
A	Heat Pump - Flow	1" (4-6), 1 1/4" (8-16)
B	Heat Pump - Return	1" (4-6), 1 1/4" (8-16)
G	Cylinder - Flow	22mm (Inox 500=3/4")
H	Cylinder - Return	22mm (Inox 500=3/4")
I	Cylinder - C.W. Inlet	22mm (Inox 500=1")
J	Cylinder - D.H.W. Outlet	22mm (Inox 500=1")

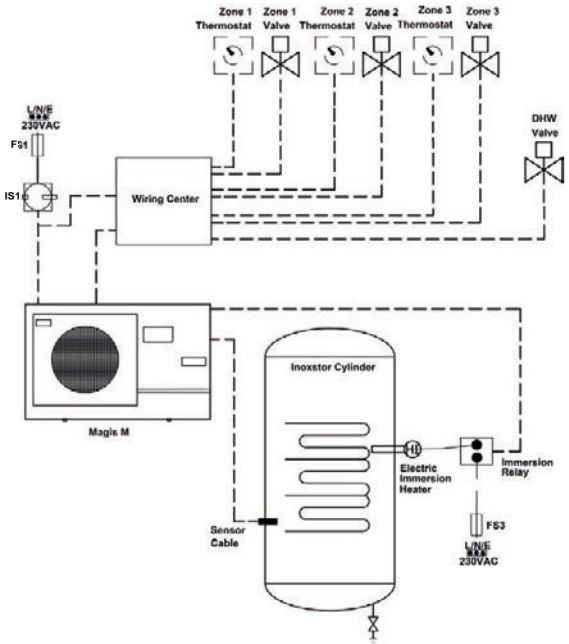
Alternative using 2 port valves (Retro Fit) ▼

Magis M Wiring Centre

An alternative for tricky retro-fit applications where the cylinder is piped as a zone from the main heating circuit is to use the Magis M Wiring Centre. It allows the use of two-port valves for controlling up to 3 heating zones plus hot water and greatly simplifies the wiring process for this configuration. Please contact us for more information.

Note - it is important to check the flowrates of the circuits are sufficient for the heat pump chosen. We always recommend the use of a header / manifold with pumped zones for heat pumps with capacities above 8kW approx (e.g. 12-14-16 models).





Immergas Magis Pro Split

The Immergas Magis Pro V2 is a split type air to water heat pump, with a packaged indoor condensing / hydronic unit and highly compact outdoor unit. The Magis Pro V2 is available in a range of capacities and is suitable for use in many homes and apartments.

The outdoor unit contains the heat exchanger, fan, four way valve and expansion valve. The refrigerant circuit must be connected to the indoor unit and filled prior to commissioning by an F-GAS registered technician.

The indoor unit contains the heat exchanger, low consumption circulator, flow meter, expansion vessel, safety valve, 3-way valve, with the controller pre-set for the management of three zones via an easy to use built in controller.

The Magis Pro V2 is a good retro-fit option when replacing an existing gas boiler as it shares common dimensions and pipe centres with gas boilers.

Features:

- Split type heat pump with internal condensing/hydronic unit and compact outdoor unit
- Inverter driven rotary compressor offers excellent efficiency
- Variable speed helicoidal three blade fan with brushless motor
- Water flow temperature up to 65ºC max*
- Operates with outside temperatures as low as -25ºC
- ErP compliant low energy circulation pump
- Built in expansion vessel and safety valve
- Low maintenance and quiet operation

Available Options

- 3kW electrical resistance kit
- Two or three zone distribution manifolds
- Relay interface kit

Specifications (T = Three Phase)

Magis Pro V2	Outdoor unit H x W x D mm	Weight kg Empty	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Indoor unit H x W x D mm	Weight kg Empty	Refrigerant
4 / 6	638 x 880 x 310	47.5	1/4"L 5/8"G	44	16	20	760 x 440 x 250	35.8	R32
9	1010 x 940 x 330	74.0	1/4"L 5/8"G	47	20	25	760 x 440 x 250	35.8	R32
12	1420 x 940 x 330	100.0	3/8"L 5/8" G	50	28	35	780 x 440 x 340	38.5	R410A
14	1420 x 940 x 330	100.0	3/8"L 5/8" G	50	30	40	780 x 440 x 340	38.5	R410A
16	1420 x 940 x 330	100.0	3/8"L 5/8" G	52	32	40	780 x 440 x 340	38.5	R410A
12 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	50	10	16.1	780 x 440 x 340	38.5	R410A
14 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	50	11	16.1	780 x 440 x 340	38.5	R410A
16 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	52	12	16.1	780 x 440 x 340	38.5	R410A

Refrigerant piping installation / charging service available.
Please contact us for details.

Magis Pro V2 4/ 6/ 9	35°C A+++	55°C A++
Magis Pro V2 12 / 14	35°C A+++	55°C A+
Magis Pro V2 16	35°C A++	55°C A+

* R32 models only. R410A = 55°C

Magis Pro Control options

Immergas Magis Pro heat pumps are supplied with a comprehensive control solution for both hot water and central heating zone control.

The heat pump's indoor unit has an inbuilt control panel which provides the following control features:

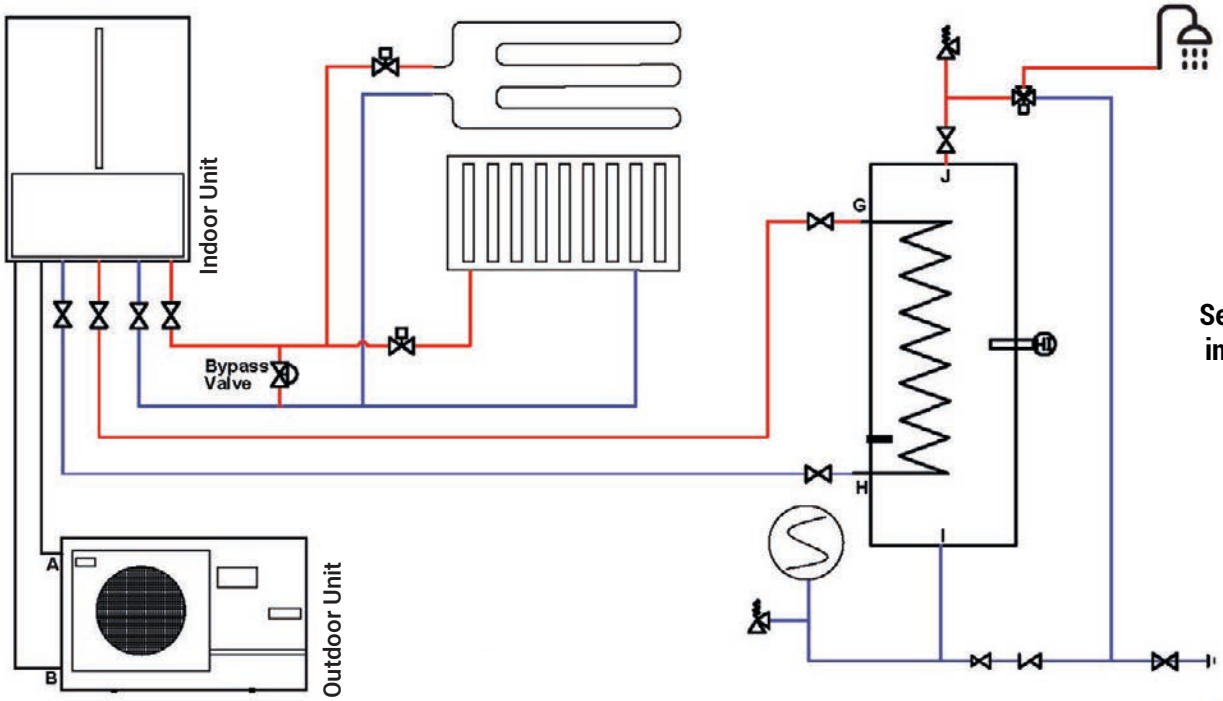
- Heat Pump Operating mode (winter/cooling/summer/stand-by/off)
- DHW temperature Setting
- Central heating (and cooling) temperature setting
- Pressure gauge

The Magis heat pump can control up to three heating zones. Simply connect Magis zone controllers or volt-free thermostats. It will activate zone valves or pumps for the controlled zones.

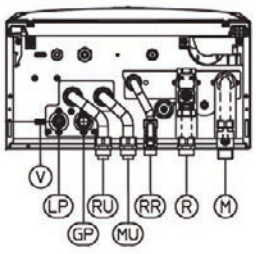
The Magis zone controller is an ideal accessory as it provides time and temperature control of each zone as well as other useful control facilities.

These Magis Pro control options also apply to the Magis Hercules Pro (see page 6) and Magis Combo (see page 8).

Magis Pro - Illustrative System Schematic (with Inoxstor Cylinder)

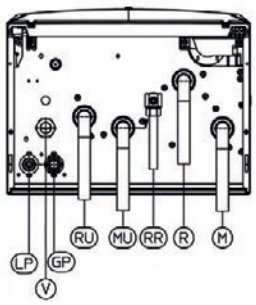


See page 16 for information on cylinders.



◄4/6/ 9

12/14/16►



Legend		4/6/9	12/14/16
A	Outdoor Unit - Gas	5/8" Flare	
B	Outdoor Unit - Liquid	1/4" Flare	3/8" Flare
LP	Indoor Unit - Liquid	1/4" Flare	3/8" Flare
GP	Indoor Unit - Gas	5/8" Flare	
MU/RU	Flow and Return to Cylinder	3/4"	1"
M/R	Flow and Return to System	3/4"	1"
G/H	Cylinder - Flow and Return	Inoxstor = 3/4"	
I	Cylinder - C.W. Inlet	Inoxstor = 3/4" (500L = 1")	
J	Cylinder - D.H.W. Outlet	Inoxstor = 3/4" (500L = 1")	

Requirements	4/6/9	12/14/16
System Min. Water Quantity	4 = 27L Others = 6 L /kW	
System Flow Rates	7.0 + l/min	
Gas Precharge	Up to 15m	
Extra Gas Requirement	20g per m	50g per m
Distance between indoor & outdoor units	Up to 30m	up to 50m
Max. height between indoor and outdoor units	20m	15 m

Immergas Magis Hercules Pro Split

The Immergas Magis Hercules Pro is a split type air to water heat pump. There is a packaged indoor condensing / hydronic unit with an in-built 235L cylinder and 40L buffer. This is connected to a highly compact outdoor unit. The Magis Hercules Pro is available in multiple capacities and is suitable for use in many homes and apartments.

The outdoor unit contains the heat exchanger, fan, four way valve and expansion valve. The refrigerant circuit must be connected to the indoor unit and filled prior to commissioning by an F-GAS registered technician.

The indoor unit contains the heat exchanger, low consumption circulator, flow meter, expansion vessel, safety valve, 3-way valve, with the controller pre-set for the management of three zones via an easy to use built in controller.

It includes a three zone hydraulic manifold with individual flow and returns. It comes with one zone pump pre-installed and a further two may be added inside the unit (sold separately).

Features:

- All the features of the Magis Pro
- 235L water heating cylinder and 40L buffer built in
- Split type heat pump with pre-packaged internal condensing/hydronic unit and compact outdoor unit
- Inverter driven rotary compressor offers excellent efficiency
- Variable speed helicoidal three blade fan with brushless motor
- Water flow temperature up to 65ºC max*
- Operates with outside temperatures as low as -25ºC
- ErP compliant low energy circulation pump
- Built in expansion vessel and safety valve
- Low maintenance and quiet operation

Available Options

- 3kW electrical resistance kit
- Two or three zone distribution manifolds
- Relay interface kit

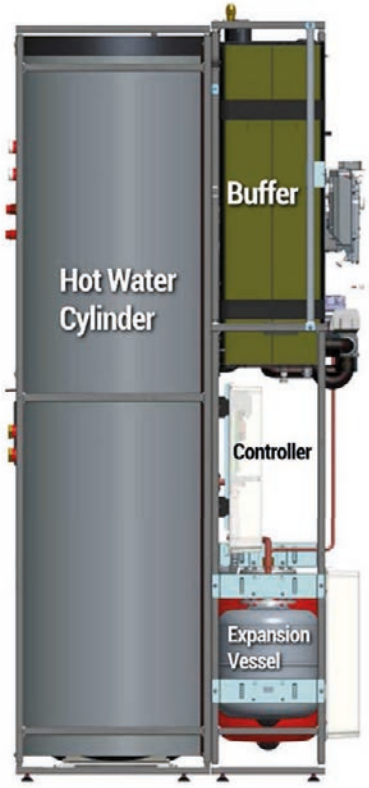
Specifications (T = Three Phase)

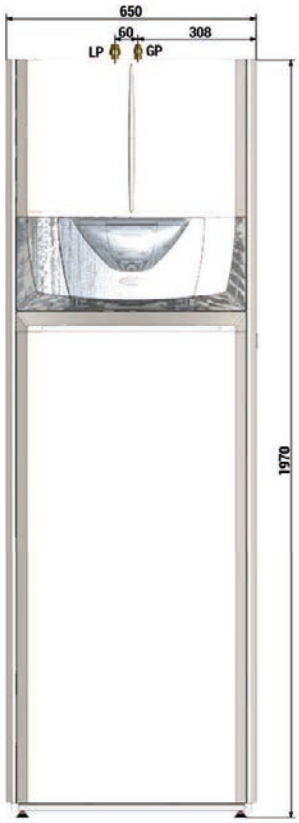
Magis Hercules Pro	Outdoor unit H x W x D mm	Weight kg Empty	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Indoor unit H x W x D mm /	Weight kg Empty	Refrigerant
4 / 6	638 x 880x 310	47.5	1/4"L 5/8"G	44	16	20	1970 x 650 x 908	212	R32
9	1010 x 940 x 330	74.0	1/4"L 5/8"G	47	20	25	1970 x 650 x 908	212	R32
12	1420 x 940 x 330	100.0	3/8"L 5/8" G	50	28	35	1970 x 650 x 908	212	R410A
14	1420 x 940 x 330	100.0	3/8"L 5/8" G	50	30	40	1970 x 650 x 908	212	R410A
16	1420 x 940 x 330	100.0	3/8"L 5/8" G	52	32	40	1970 x 650 x 908	212	R410A
12 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	50	10	16.1	1970 x 650 x 908	212	R410A
14 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	50	11	16.1	1970 x 650 x 908	212	R410A
16 T	1420 x 940 x 330	101.5	3/8"L 5/8" G	52	12	16.1	1970 x 650 x 908	212	R410A

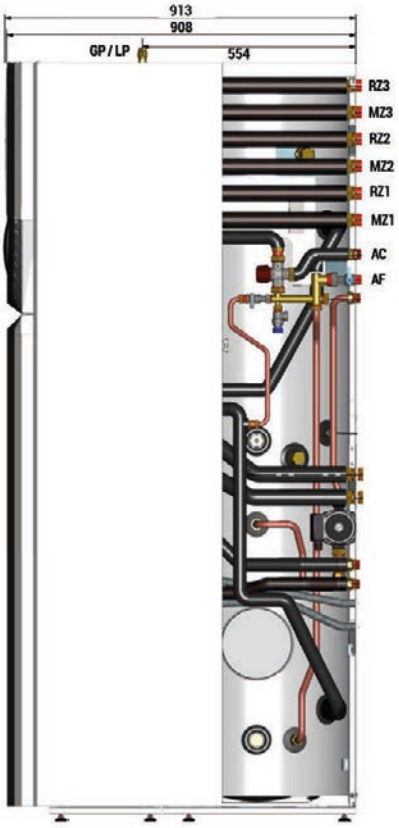
Refrigerant piping installation / charging service available.
Please contact us for details.

Magis Hercules Pro 4/ 6/ 9	35°C A+++	55°C A++
Magis Hercules Pro 12 / 14	35°C A+++	55°C A+
Magis Hercules Pro 16	35°C A++	55°C A+

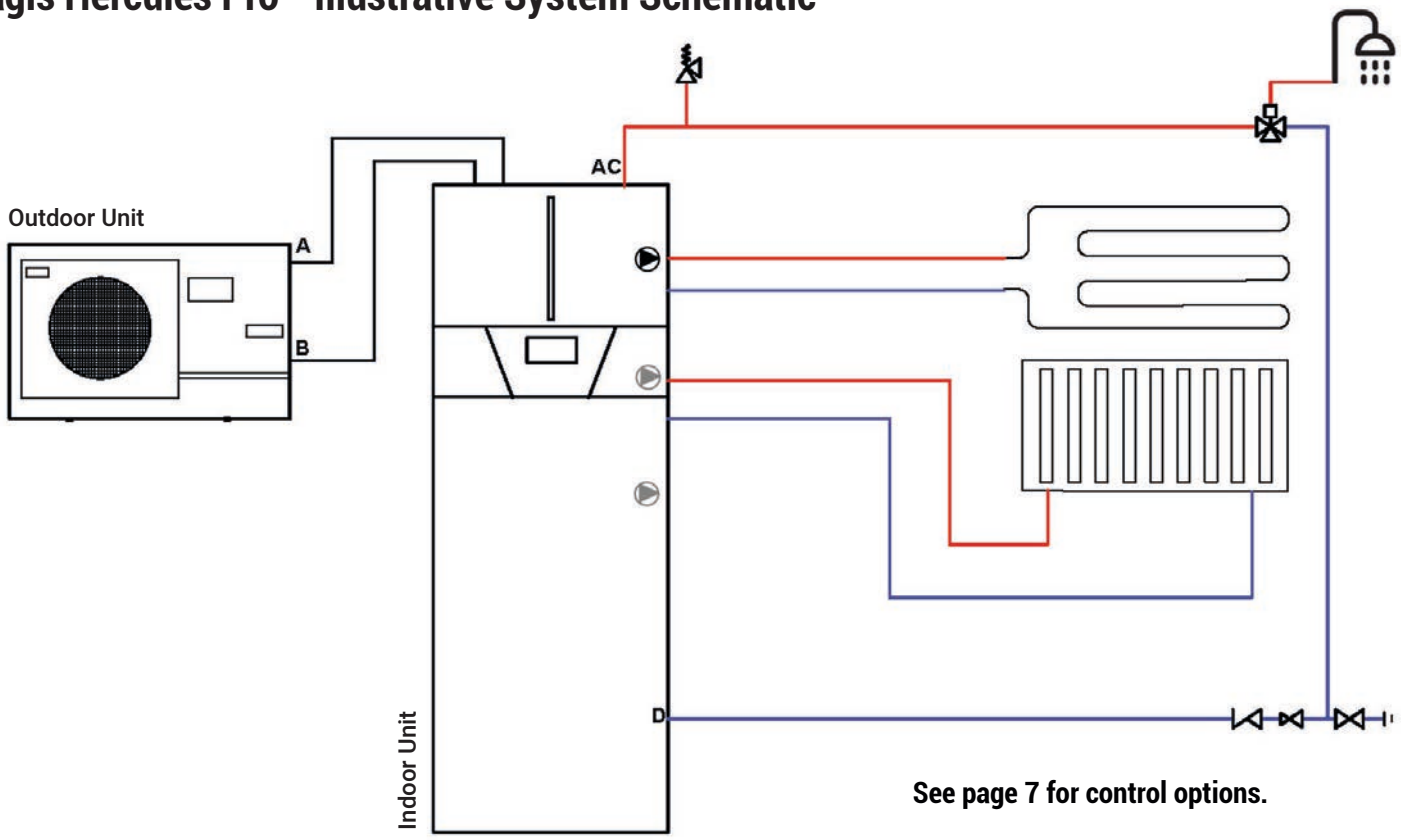
* R32 models only. R410A = 55°C







Magis Hercules Pro - Illustrative System Schematic



See page 7 for control options.

Requirements	4/6/9	12/14/16
System Min. Water Quantity	N/A (Buffer built in)	
System Flow Rates	7.0 + l/min	
Gas Precharge	Up to 15m	
Extra Gas Requirement	20g per m	50g per m
Distance between indoor & outdoor units	Up to 30m	up to 50m
Max. height between indoor and outdoor units	20m	15 m

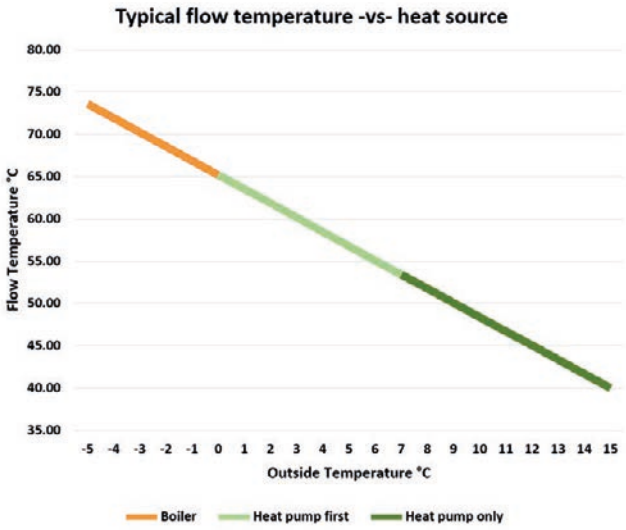
Legend		4/6/9	12/14/16
A	Outdoor Unit - Gas	5/8" Flare	
B	Outdoor Unit - Liquid	1/4" Flare	3/8" Flare
LP	Indoor Unit - Liquid	1/4" Flare	3/8" Flare
GP	Indoor Unit - Gas	5/8" Flare	
MZ1/2/3	Zone 1/2/3 Flow	3/4"	
RZ1/2/3	Zone 1/2/3 Return	3/4"	
AF	Cold Water - Inlet	3/4"	
AC	D.H.W. Outlet	3/4"	

Immergas Magis Combo Heat Pump for older homes

Hybrid Heat Pump / Boiler product

The Magis Combo is a hybrid air source heat pump product which combines a very efficient heat pump with a powerful gas boiler module.

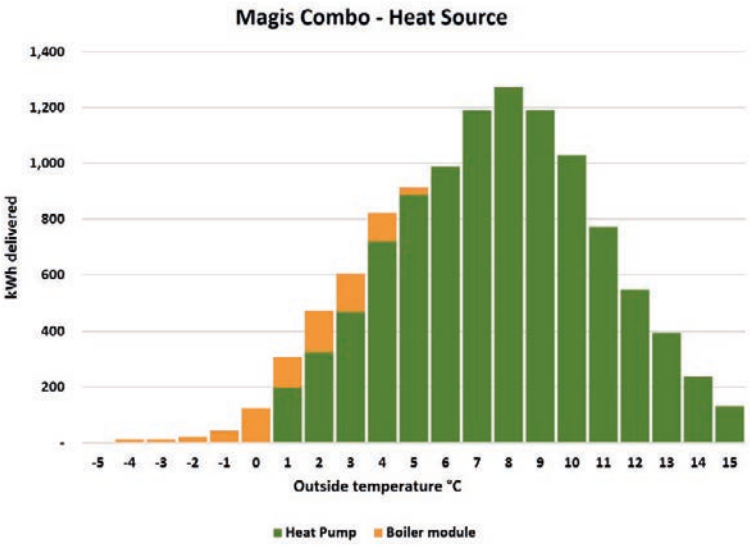
It can be fitted in any house with no need to change the radiators or water heating tank in most cases. It is ideal for homes with a high level of heat loss.



Most of the heat demand during the heating season is provided by the heat pump with the boiler module kicking in during cold weather when the heat pump may not have enough capacity.

Smart auto-switching electronics decide when to switch over automatically - always prioritising the heat pump.

The performance of the Magis Combo will vary depending on the house. In a typical house, the heat pump will provide over 90% of the heat with the boiler module providing the rest.



Magis Combo
12/14/16 shown

The Magis Combo has an outdoor unit and an indoor unit connected by refrigerant piping and a two core data cable.

The outdoor unit (single or twin-fan, depending on model) takes heat from the air outside and transfers it into the refrigerant circuit, The indoor unit transfers the heat from the refrigerant into the heating or hot water system.

The Magis Combo is unique as it contains a supplementary gas boiler module in the indoor unit which allows it to deliver flow temperatures of up to 80°C when required.

This powerful back-up means it is suitable for use in almost any home without changing the radiators or water heating tank.

The indoor unit has similar pipe locations to a gas boiler, which makes it an ideal boiler replacement.

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Installation

The Magis Combo is easily installed.

Indoor Unit

The indoor unit is a wall-hung module with refrigeration, gas, water and drain connections underneath. Flue connection is on top.

It has similar pipe connection locations to a gas boiler which makes it very easy to install when replacing an existing boiler.

Electrical connections are accessed from behind the front cover. Power to the indoor unit is to be provided via a 5A fused spur.

The Magis Combo supports up to three heating zones. Simply connect the volt-free thermostats and zone valves.

Outdoor Unit

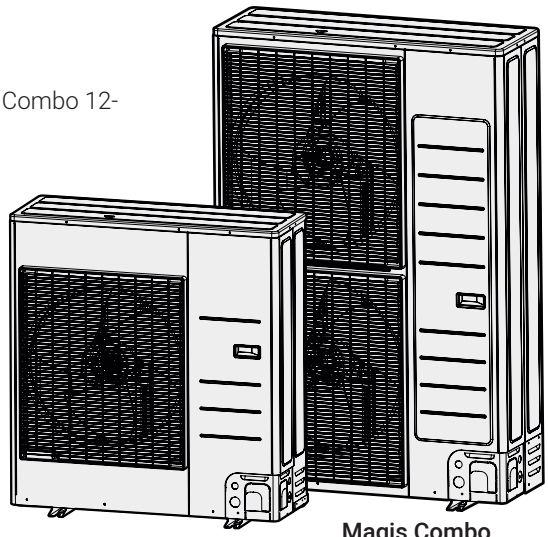
The Magis Combo's outdoor unit is either single fan (Magis Combo 9) or twin fan (Magis Combo 12-14-16).

The unit may be either wall mounted via mounting brackets or floor standing using flexi-feet. Either a gravel bed must be present or condensate piped to drain.

The outdoor unit clearances must be observed - broadly these are 300mm left/rear, 600mm right and 1500mm front. Please consult installation instructions for more information.

The outdoor unit must be powered by a dedicated supply and an appropriate fuse and isolator must be installed.

A two core data cable is installed between the outdoor and indoor unit.



Magis Combo 9

Magis Combo 12/14/16

Refrigeration piping

Refrigeration piping must be charged by an F-Gas registered technician.

RVR offer a refrigeration piping installation service if required. In this case, a duct must be made available (no sharp bends). The F-Gas technician will install the refrigerant piping through this duct, connect both ends, charge with refrigerant and commission the heat pump.

We also provide a commissioning only service excluding the f-gas work.

Flue

A 750mm long 60/100 Ø horizontal flue kit is normally used.

A 60/100 Ø vertical flue kit is also available. 80/125 Ø concentric or 80/80 Ø separated flue may also be used. Please see instructions for further information.

Immergas Magis Combo Plus V2

The Magis Combo Plus is designed for connection to a system which incorporates a water heating cylinder.

The indoor unit contains the indoor refrigeration components as well as heating expansion vessel, safety valve and pump.

A 24kw gas boiler module (32kW on 12-16 models) provides additional capacity for heating or hot water. It is available in Natural Gas or LPG versions.

The Magis Combo Plus has one set of connections for the heating system and one set of connections for direct connection to the water heating cylinder.

A smart auto-switching mode allows the Magis Combo to supply heat to the heating system using either the heat pump or boiler.

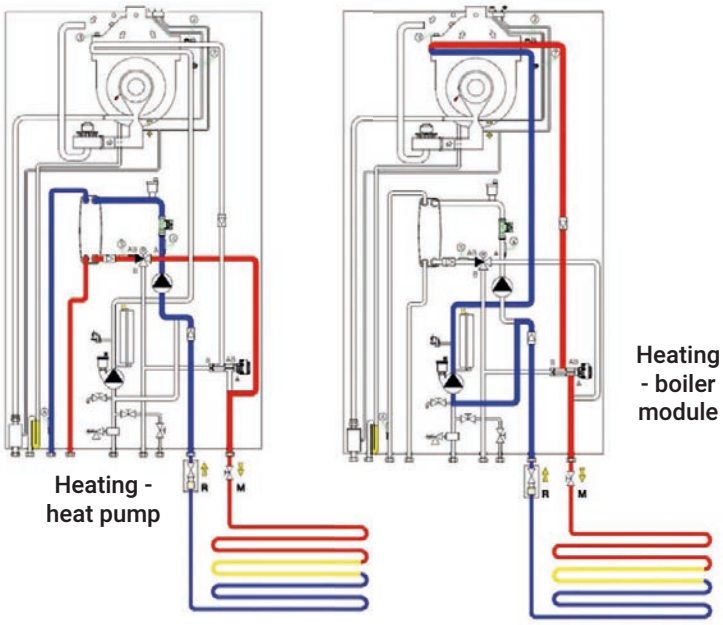
Weather compensation allows the Magis Combo to vary the flow temperature so that high flow temperatures are only provided in the coldest of weather, without sacrificing comfort.

When the required flow temperature is within the operating range of the heat pump (max 65°C - Magis Combo 9, max 55°C - Magis Combo 12-14-16) then the heat pump will be used. This is the majority of the heating season.

If the flow temperature or load is too high then the gas boiler module will be used. This will normally be during cold weather.

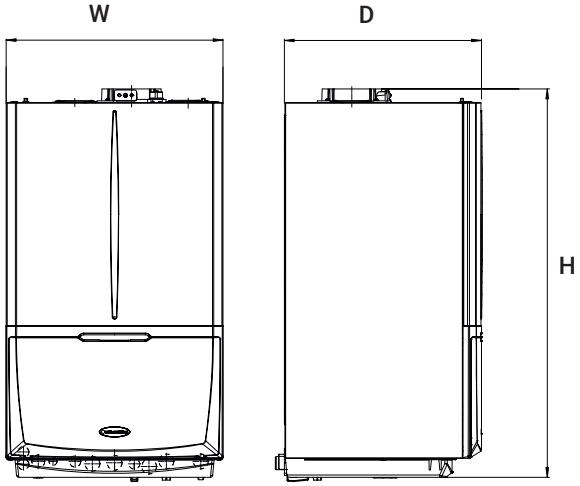
Either the heat pump or gas boiler module can provide water heating to the cylinder, depending on load. A sensor is connected to monitor the temperature of the water heating cylinder. The hot water is automatically heated as needed.

The Magis Combo has an anti-legionella function. It automatically heats the hot water to over 60°C periodically to ensure the hygiene of the domestic hot water is maintained. No Immersion is required.

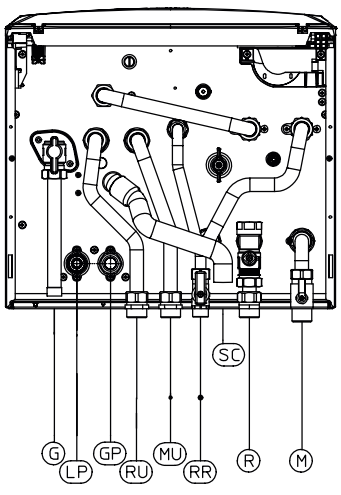


Magis Combo Plus V2	Outdoor unit H x W x D mm	Weight kg Empty	Pipe Connections	Noise db(A)	Max Current A	Breaker Size A	Indoor unit H x W x D mm	Weight kg Empty	Refrigerant	Max Flow °C
9	1010 x 940 x 384	73	1/4"L 5/8"G	64	22	32	787 x 440 x 400	55.8	R32	65 / 80
12	1420 x 940 x 384	100	3/8"L 5/8"G	64	28	35	811 x 440 x 474	61.8	R410A	55 / 80
14					30	40				
16				66	32					

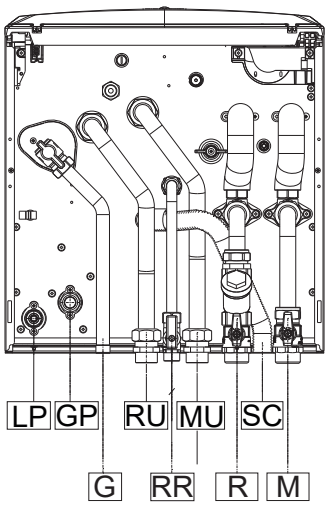
Magis Combo Plus Indoor Unit



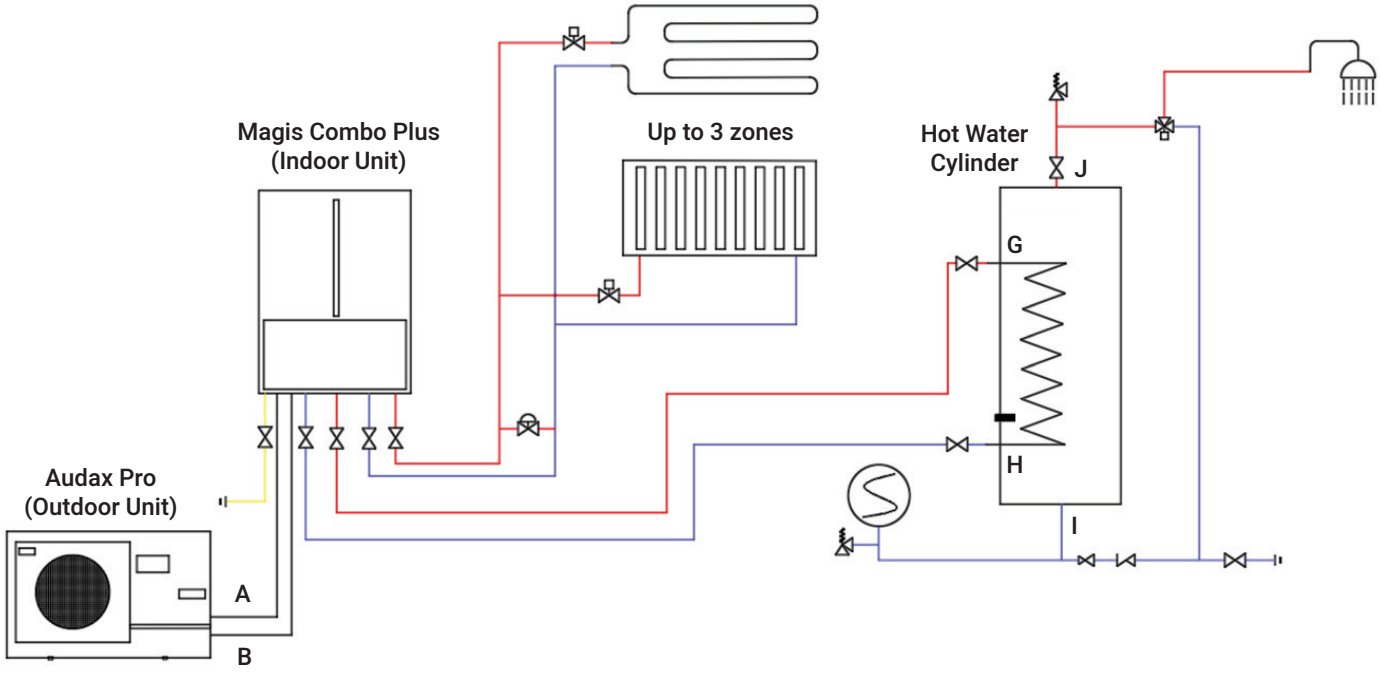
Magis Combo Plus 9 - indoor (underside)



Magis Combo Plus 12-14-16 - indoor (underside)

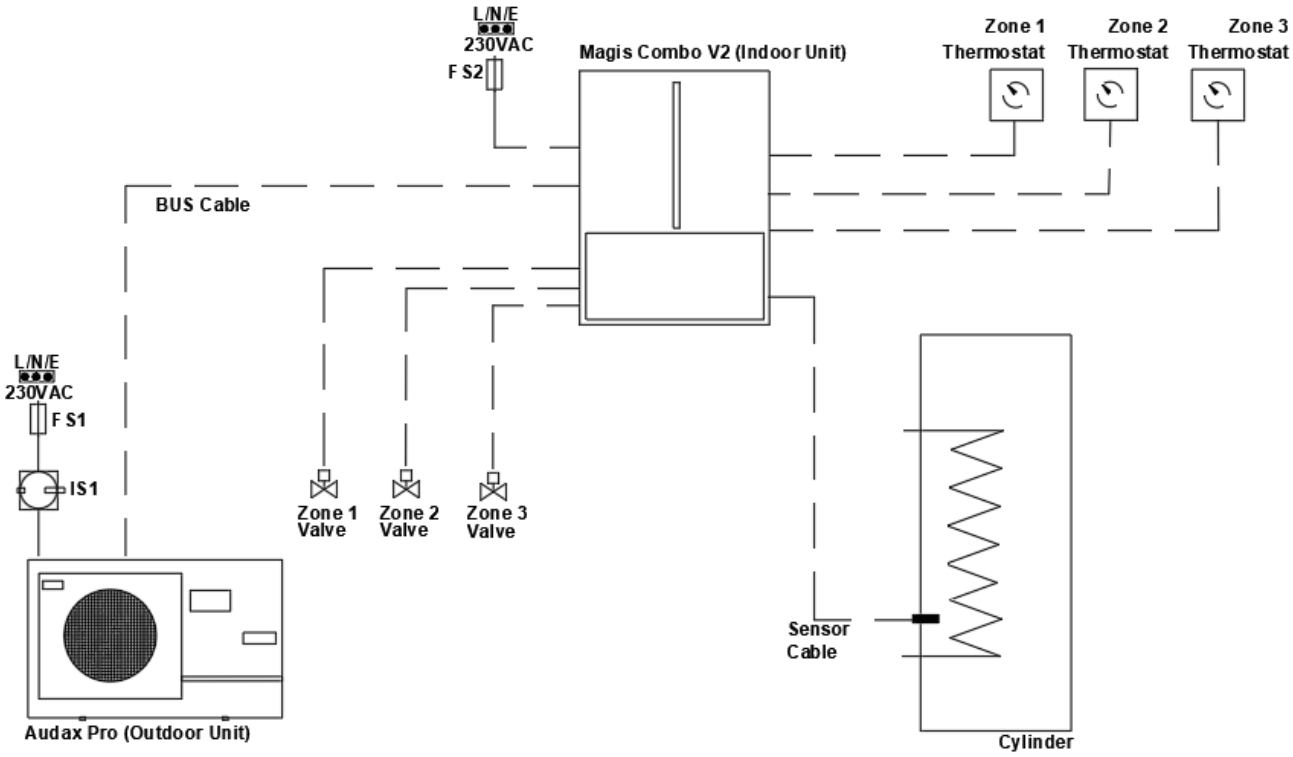


Magis Combo Plus V2 - Illustrative Schematics



Magis Combo Plus V2	9	12-14-16
System Min. Water Quantity	6 L / kW	
System Flow Rates	7.0 + l/min	
Refrigerant Gas Precharge	Up to 15m	
Extra Refrigerant per m beyond	20g	50g
Max distance indoor <-> outdoor	35m	50m
Max. height indoor above outdoor	20m	30m

Connections - Magis Combo Plus V2		9	12-14-16
A	Outdoor Unit - Gas	5/8" Flare	
B	Outdoor Unit - Liquid	1/4" Flare	3/8" Flare
LP	Indoor Unit - Liquid	1/4" Flare	3/8" Flare
GP	Indoor Unit - Gas	5/8" Flare	
G	Natural Gas / LPG	3/4"	
MU/RU	Flow and Return to Cylinder	3/4"	1"
M/R	Flow and Return to System	3/4"	1"
RR	System fill	1/2"	
SC	Condensate drain	Min. 13mm internal Ø	
G/H	Cylinder - Flow and Return	Inoxstor = 3/4"	
I	Cylinder - C.W. Inlet	Inoxstor = 3/4" (500L=1")	
J	Cylinder - D.H.W. Outlet	Inoxstor = 3/4" (500L=1")	



Immergas Magis Combo V2 (combi version)

The Magis Combo (combi version) is designed for connection to a system which does not have any water heating cylinder. It provides hot water instantaneously, on-demand.

The indoor unit contains the indoor refrigeration components as well as heating expansion vessel, safety valve and pump along with DHW plate heat exchanger.

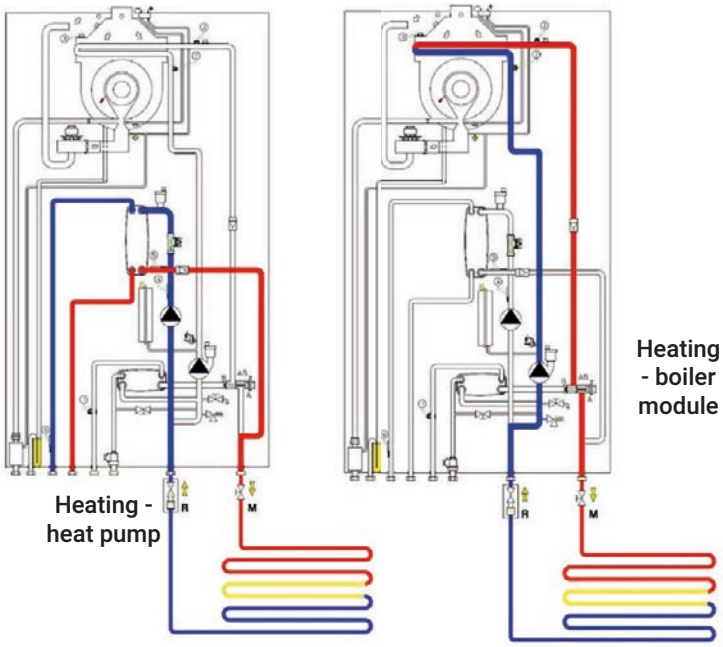
A 27kW gas boiler module (Natural Gas or LPG) provides ample domestic water heating capacity as well as 24kW of additional capacity for heating (note - 12-16 models have a larger 32kW boiler module).

Weather compensation allows the Magis Combo to vary the flow temperature so that high heating flow temperatures are only provided in the coldest of weather, without sacrificing comfort.

When the required flow temperature is within the operating range of the heat pump (max 65°C - Magis Combo 9, max 55°C - Magis Combo 12-14-16) then the heat pump will be used. This is the majority of the heating season.

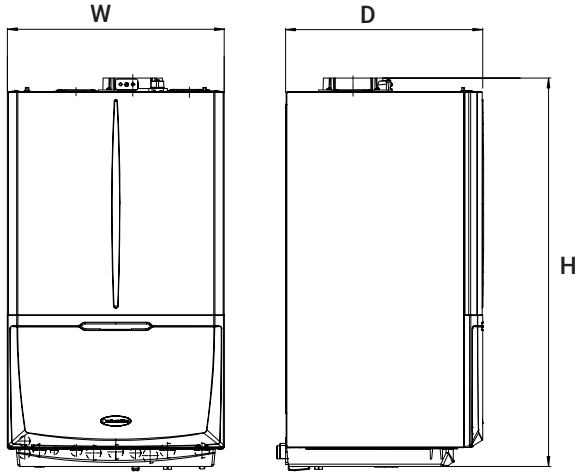
If the flow temperature or load is too high then the gas boiler module will be used. This will normally be during cold weather.

The gas boiler module heats domestic hot water instantaneously, on-demand. This makes the Magis Combo (combi version) an ideal replacement for an existing combi gas boiler or where space for a water heating cylinder is limited.

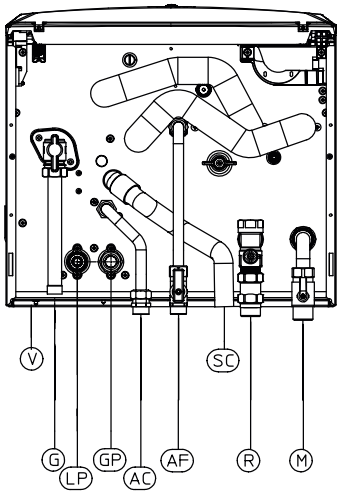


Magis Combo V2	Outdoor unit H x W x D mm	Weight kg Empty	Pipe Connections	Noise db(A)	Max Current A	Breaker Size A	Indoor unit H x W x D mm	Weight kg Empty	Refrigerant	Max Flow °C
9	1010 x 940 x 384	74.0	1/4"L 5/8"G	47	22	32	787 x 440 x 400	55.8	R32	65 / 80
12	1420 x 940 x 384	100.0	3/8"L 5/8"G	64	28	35	811 x 440 x 474	60	R410A	55 / 80
14					30	40				
16				66	32					

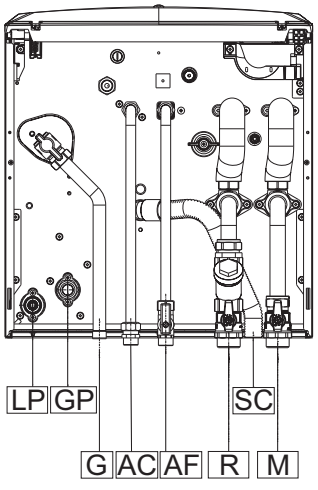
Magis Combo Indoor Unit



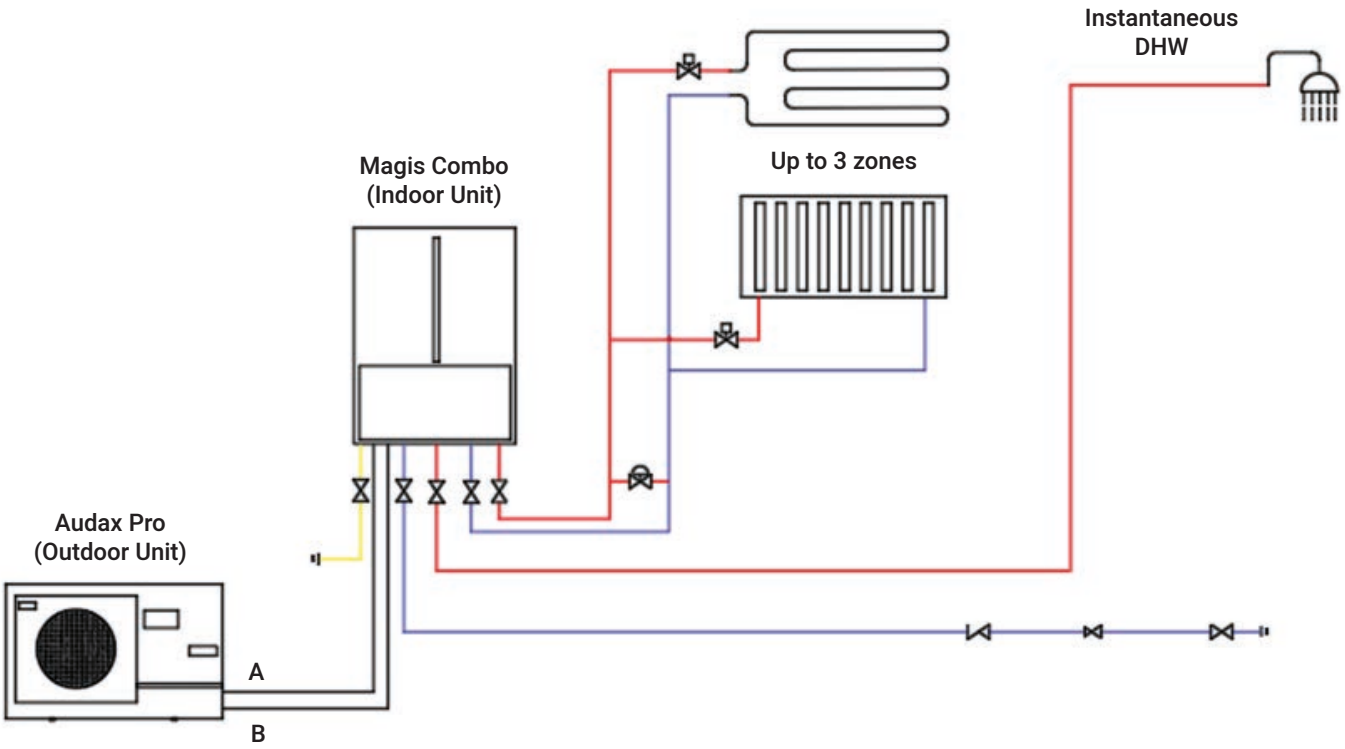
Magis Combo 9 - Indoor (Underside)



Magis Combo 12-14-16 - Indoor (Underside)

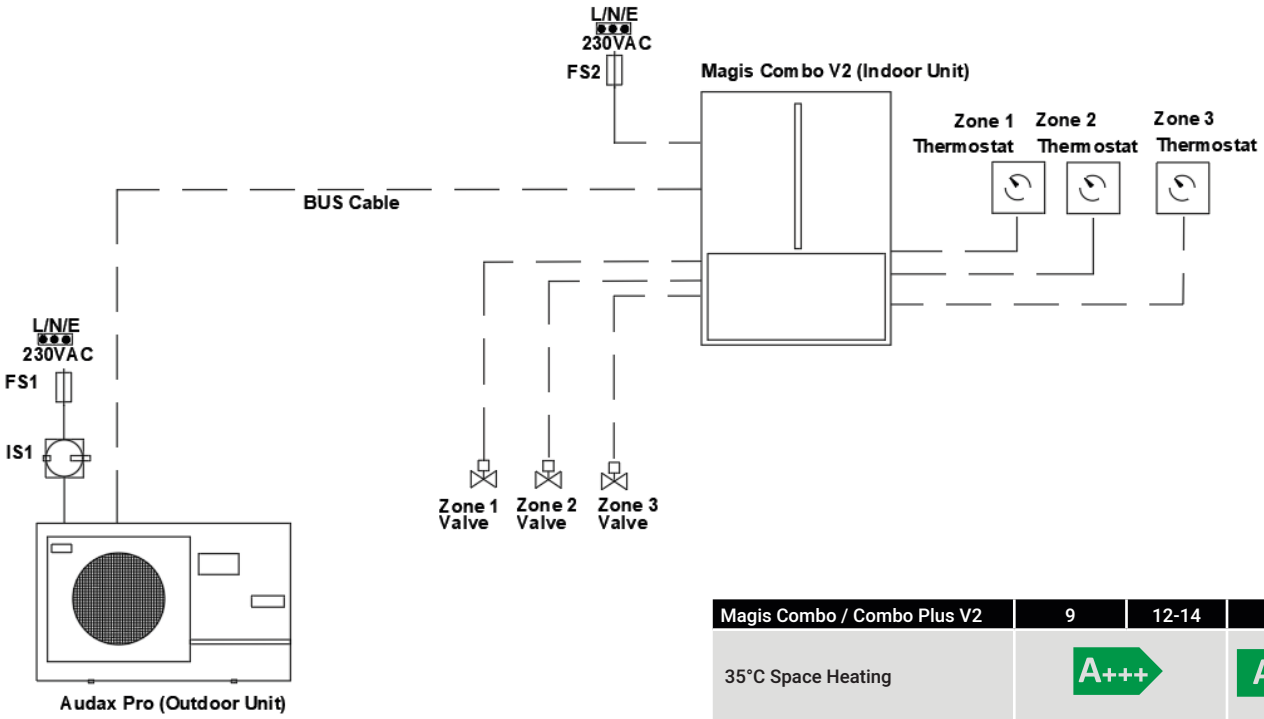


Magis Combo V2 (combi version) - Illustrative Schematics



Magis Combo V2	9	12-14-16
System Min. Water Quantity	6 L / kW	
System Flow Rates	7.0 + l/min	
Refrigerant Gas Precharge	Up to 15m	
Extra Refrigerant per m beyond	20g	50g
Max distance indoor <-> outdoor	35m	50m
Max. height indoor above outdoor	20m	30m

Magis Combo V2		9	12-14-16
A	Outdoor Unit - Gas	5/8" Flare	
B	Outdoor Unit - Liquid	1/4" Flare	3/8" Flare
LP	Indoor Unit - Liquid	1/4" Flare	3/8" Flare
GP	Indoor Unit - Gas	5/8" Flare	
G	Natural Gas / LPG	3/4"	
M/R	Flow and Return to System	3/4"	1"
AF	Cold Water Inlet	1/2"	
AC	DHW Outlet	1/2"	
SC	Condensate drain	Min. 13mm internal Ø	



Magis Combo / Combo Plus V2	9	12-14	16
35°C Space Heating	A+++		A++
55°C Space Heating	A++	A+	

Aerocyl Heat Pump Cylinder c/w unvented kit

The Aerocyl Heat Pump cylinder (ErP) is a stainless steel cylinder with high capacity 28mm coil designed to optimise heat transfer in heat pump applications.

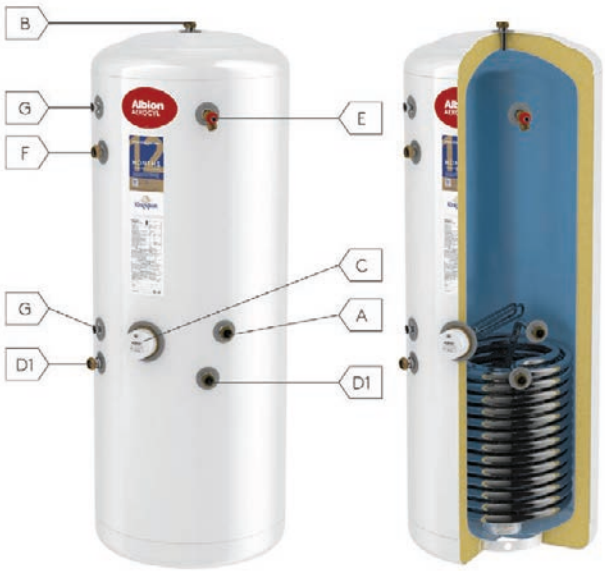
This attractive, factory insulated cylinder offers high performance and reliability and is supplied with all of the components required for easy installation. T&P Valve and 3kW immersion are installed as standard and a dual thermostat, tundish, inlet control set, potable water expansion vessel and motorised zone valve are also supplied.

This cylinder has great peace of mind as it carries a 10 year manufacturer's warranty (subject to T&Cs.)

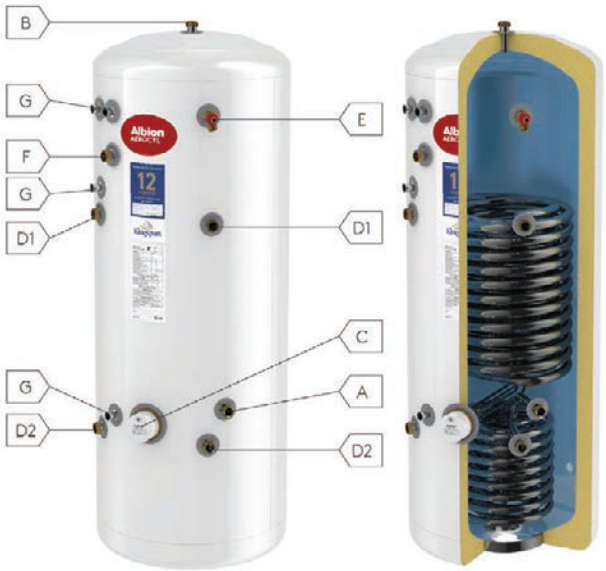
It is ideal for use with Immergas Magis M, Magis Pro V2, Magis Combo Plus and Audax heat pumps. The Aerocyl may also be used with Mitsubishi monobloc heat pumps if FTC6 and accessories are added.
The slimline version in particular is ideal for space-limited applications.

Form Factor	Nominal Capacity (Litres)	Product Code	Height (mm)	Diameter (mm)	ErP Rating	Standing Loss (W)
Slimline (single coil)	150	SWH787	1458	475	C	66
	180	SWH788	1708	475	C	72
	210	SWH789	2021	475	C	87
Standard (single coil)	150	SWH780	1117	550	C	59
	180	SWH781	1305	550	C	67
	210	SWH782	1493	550	C	75
	250	SWH783	1744	550	C	84
	300	SWH784	2057	550	C	93
Solar (twin coil)	300	SWH784	2057	550	C	93

Single Coil



Solar Version



A	22mm Cold feed with dip pipe to diffuser
B	22m Hot water outlet
C	Immersion heater
D1	22mm Heat pump coil connections
D2	22mm Solar coil connections
E	Temperature & pressure relief valve
F	22mm Secondary return (>= 210L only)
G	Dry stat pocket

400L,500L and buffer / cylinder + buffer options also available
Please contact us for more information

Aerocyl cylinders supplied with:


Temperature & pressure relief valve


Acetal Tundish


Two port valve


Inlet control set with balanced cold


Potable water expansion vessel


Dual thermostat


Immersion Heater 3kW - 14"

Immergas Inoxstor Twin Coil

The Immergas range of INOXSTOR V2 hot water heaters are manufactured from stainless steel and make an ideal companion to the Immergas Audax and Audax distributer.

There are three models with capacities of 200, 300 and 500 litres.

When used in heat pump applications, both coils may be easily joined to provide optimum heat exchange for the heat pump. An immersion heater may be installed to provide legionella control. The water heater design complies with EN 12897.

Please note - a suitably dimensioned un-vented kit must be installed with the cylinder to ensure safe operation.

Model	Height mm	Diameter mm	Weight kg empty	Weight kg full
Inoxstor 200	1325	620	61	275
Inoxstor 300	1715	620	75	366
Inoxstor 500	1735	810	101	599

Immergas Omnistor Heat Pump Cylinder

The Immergas range of OMNISTOR hot water heaters are manufactured from stainless steel.

They contain an extra high surface area coil which is designed specifically for use with low temperature heat sources such as heat pumps.

They are available in capacities of 300 and 500 litres. The water heaters comply with EN 12897.

Model	Height mm	Diameter mm	Weight kg empty	Weight kg full
OMNISTOR 300	1715	620	75	366
OMNISTOR 500	1735	810	101	599

Unvented kits for Immergas cylinders

All unvented water heaters must be installed with an unvented kit for safety reasons.

In capacities of up to 500L, unvented kits are based around a monobloc inlet control valve including pressure reducing valve, pressure relief valve, check valve and filter.

An expansion vessel, pressure gauge, T&P valve and tundish are also supplied.

Capacity	Model	Expansion Vessel Capacity L
Up to 300L	AMS950	25
400/500L	ACW040	40

Immergas Rapax Water Heater

RAPAX 100

RAPAX 200/300 (and Sol)

IMMERGAS

The RAPAX V2/V3 is a water heater with an in-built heat pump. It is a great solution for heating of domestic hot water for houses and apartments.

It uses the heat in the air as a source of free, renewable energy for heating water. It is available in three models. The Rapax 100 V2 is a wall mounted unit, while the Rapax 200 V3 / Rapax 300 V3 and the twin coil "Sol" models are floor standing.

The range also contains an immersion heater which provides legionella control and boost mode. It can also be integrated with solar PV in order to utilise excess electricity when available.

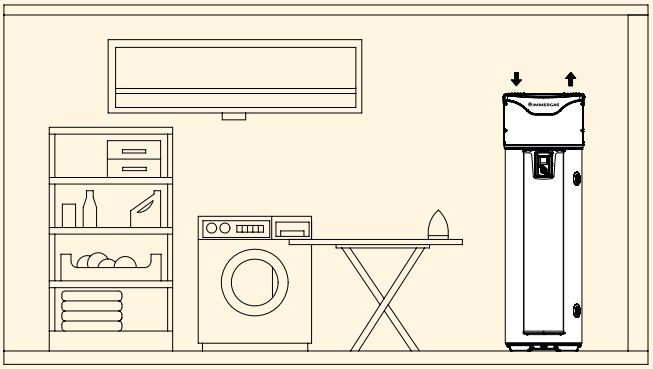
The RAPAX SOL model may be combined with a solar thermal system or external heat source to further reduce energy consumption.

The RAPAX units operate at an extremely low noise level, making them suitable for installation in living areas. They may also be installed in unheated indoor areas such as a garage, laundry or storeroom. They simply require ducting of the air supply and exhaust.

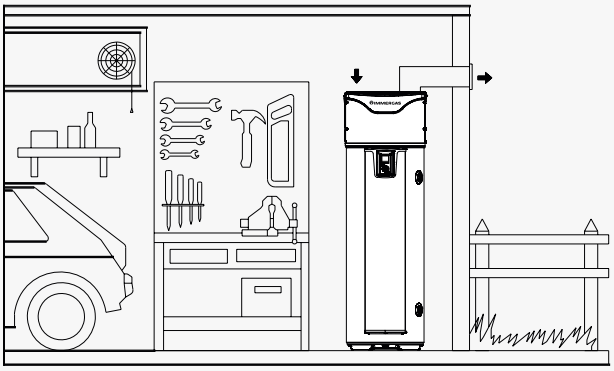
Model	Rapax dimensions H x W x D mm	Empty weight kg	Max power absorbed - heat pump W	Power absorbed - immersion W	Breaker Size A	Refrigerant
Rapax 100 V2	1234 x 522 x538	57	350	1200	10	R134A
Rapax 200 V3	1617 x 620 x 665	80	700	1600	20	R513A
Rapax 200 V3 Sol	1617 x 620 x 665	97	700	1600	20	R513A
Rapax 300 V3	1957 x 620 x 1617	92	700	1600	20	R513A
Rapax 300 V3 Sol	1957 x 620 x 1617	111	700	1600	20	R513A

All RAPAX models shown

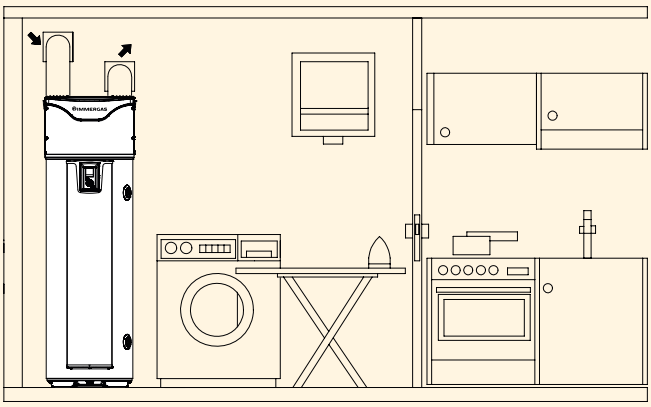
XL A+



UNDUCTED INSTALLATION IN UNHEATED SPACES (Volume > 20 m³)
Very useful in a laundry, garage or utility room. In a laundry an advantage is room dehumidification and the recovery of the wasted heat from washing machines and dryers.



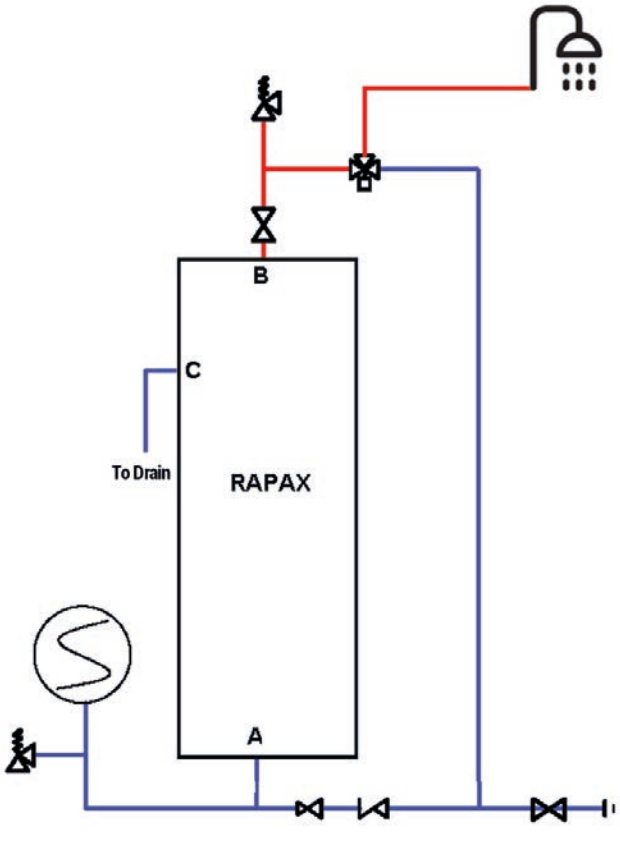
INSTALLATION IN UNHEATED SPACES (volume > 20 m³), WITH 1 EXHAUST DUCT
In this case, a ventilation opening must be provided.



INSTALLATION IN HEATED OR UNHEATED ROOMS, WITH 2 DUCTS (INTAKE AND EXHAUST)
Comply with maximum duct length as per the instruction manual. Use insulated ducting to avoid condensation. Use grilles on air-intake and exhaust in order to avoid the entry of foreign matter.

The electrical installation must comply with IS10101.

Rapax heat pump water heater - Illustrative Schematic



A	Cold Water Inlet	3/4"
B	How Water Outlet	3/4"
C	Condensate Discharge	Ø20

Mitsubishi Ecodan Monobloc (PUZ)

FTC6 controller (comes on indoor unit overleaf)

The Mitsubishi PUZ-WM monobloc type heat pumps are a high quality heat pump from the world's leading heat pump manufacturer, Mitsubishi Electric. They use R32 refrigerant.

Four versions are available, which can produce 5.0kW, 6.0kW 8.5kW or 11.2 kW of heat when it is 2°C outside but can operate efficiently with outside temperatures as low as -25°C.

The monobloc heat pumps have an external part, mounted outside the home and are coupled with a pre-packaged or pre-plumbed cylinder inside the home. These two units are connected together by pipes carrying the heating water. They need a single-phase power supply. The outside part is electrically linked to inside by a 4 core cable. The PUZ-WM are low maintenance and quiet in operation. They are supplied with 2-zone energy efficient space heating control.

Mitsubishi Ecodan heat pumps feature the Mitsubishi FTC6 controller which has an easy to use graphical display and allows all aspects of the heat pump to be controlled. It includes features such as weather compensation and hot water priority as standard.

The FTC6 controller can control up to two heating zones and will automatically manage hot water production and legionella control. It has an in-built energy monitoring function along with the ability to record all the operating parameters of the heat pump for the last six months to an in-built SD card.

Mitsubishi Melcloud is a popular accessory which allows access to and control of all aspects of the system using an easy-to-use app. When used in conjunction with one or more Mitsubishi wireless controllers and a wireless receiver, it also allows control of the heating zones remotely and will record and display all temperatures within the home for the previous six months.

35°C A+++ 55°C A++

Ecodan	Capacity kW @ A2/W35	Height mm	Width mm	Depth mm	Weight kg	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Refrigerant
PUZ-WM50VHA	5	943	950	330	71	1"	47	13	16	R32
PUZ-WM60VAA	6	1020	1050	480	98	1"	45	13	16	R32
PUZ-WM85VAA	8.5	1020	1050	480	98	1"	45	22	25	R32
PUZ-WM112VAA	11.2	1020	1050	480	119	1"	45	28	32	R32
PUZ-HWM140VHA	14	1350	1020	360	132	1"	53	35	40	R32

Note appearance may vary. 5kW model has similar chassis. 14kW model is twin fan and has a different appearance. Contact us for details.

Mitsubishi PUZ Monobloc - Pre-packaged cylinders

The Mitsubishi range of pre-packaged cylinders provide improved performance and faster heat up times through the use of plate heat exchanger technology.

They include the Mitsubishi FTC6 controller, which is easy to use and allows for rapid commissioning, as well as an immersion heater and automatic legionella control. Energy monitoring and data logging functions are included as standard.

The pre-packaged cylinder has a sleek, appliance-like appearance and can control up to two heating zones.

Cylinder	Litres	Height mm	Width mm	Depth mm	Weight kg	Heating Pipe Connections	CW Pipe Connections	DHW Pipe Connections
EHPT20X-MHEDW	200	1600	595	680	90	28mm	28mm	22mm

Mitsubishi PUZ Monobloc - Control Options

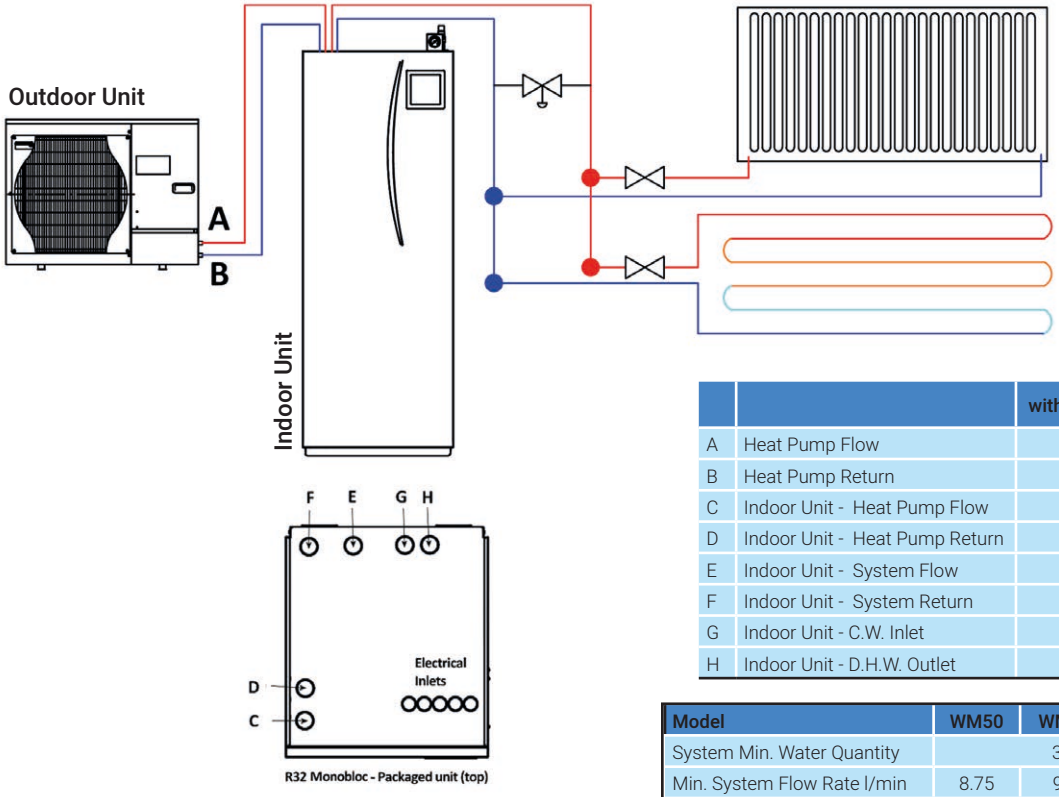
The FTC6 controller manages the operation of the heat pump in heating and hot water mode. It provides time control for up to two heating zones as well as the water heating. It is easy to use and has an intuitive, user friendly animated display. It contains features such as weather compensation, hot water priority and automatic legionella control of the hot water cylinder.

For systems with less than three control zones, we recommend using one Mitsubishi wireless controller per heating zone. When the Mitsubishi wireless thermostats are installed, the FTC6 controller can automatically adapt to usage patterns to optimise comfort as well as the efficiency of the heat pump.

Full system diagnostics are available as well as built-in energy monitoring as standard. All operating data for the previous 6 months is available through the app, such as amount of Electricity consumed, Heat delivered, Water heated, Room temperature (if using the wireless thermostats), fault history, etc

Mitsubishi wireless controller (above). MELCloud (below)

Mitsubishi PUZ Monobloc - Illustrative System Schematic



R32 Monobloc - Packaged unit (top)

		with Pre-packaged	with Pre-Plumbed
A	Heat Pump Flow	1"	1"
B	Heat Pump Return	1"	1"
C	Indoor Unit - Heat Pump Flow	28mm	22mm
D	Indoor Unit - Heat Pump Return	28mm	22mm
E	Indoor Unit - System Flow	22mm	22mm
F	Indoor Unit - System Return	22mm	22mm
G	Indoor Unit - C.W. Inlet	22mm	22mm
H	Indoor Unit - D.H.W. Outlet	22mm	22mm

Model	WM50	WM60	WM85	WM112	WM140
System Min. Water Quantity	37L			58L	60L
Min. System Flow Rate l/min	8.75	9.5	9.5	13	9
Max. System Flow Rate l/min	15.25	21	21	20	19

Mitsubishi Ecodan Split (SUZ)

The Mitsubishi SUZ-SWM-VA split type heat pumps are a high quality heat pump from the world's leading heat pump manufacturer, Mitsubishi Electric. They use R32 refrigerant.

Three versions are available, which can produce 4.0kW, 6.0kW or 8.0 kW of heat when it is 2°C outside but can operate efficiently with outside temperatures as low as -25°C.

These split type heat pumps have an external part, mounted outside the home and an internal part, connected together by refrigerant tubing. They need a single-phase power supply. The outside part is electrically linked to inside by a 4 core cable. The SUZ-SWM-VA are low maintenance and quiet in operation. They are supplied with 2-zone energy efficient space heating control.

Mitsubishi Ecodan heat pumps feature the Mitsubishi FTC6 controller which has an easy to use graphical display and allows all aspects of the heat pump to be controlled. It includes features such as weather compensation and hot water priority as standard.

The FTC6 controller can control up to two heating zones and will automatically manage hot water production and legionella control. It has an in-built energy monitoring function along with the ability to record all the operating parameters of the heat pump for the previous six months to an in-built SD card.

Mitsubishi Melcloud is a popular accessory which allows access to and control of all aspects of the system using an easy-to-use app. When used in conjunction with one or more Mitsubishi wireless controllers and a wireless receiver, it also allows control of the heating zones remotely and will record and display all temperatures within the home for the previous six months.

FTC6 controller (comes on indoor unit overleaf)

35°C A+++ 55°C A++

Ecodan	Capacity kW @ A2/W35	Height mm	Width mm	Depth mm	Weight kg	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Refrigerant
SUZ-SWM40VA	4	840	880	330	54	1/4"L 1/2" G	44	13.9	16	R32
SUZ-SWM60VA	5	840	880	330	54	1/4"L 1/2" G	45	13.9	16	R32
SUZ-SWM80VA	6.5	840	880	330	54	1/4"L 1/2" G	46	13.9	16	R32

Mitsubishi SUZ Split - Pre-packaged cylinders

The Mitsubishi range of pre-packaged split cylinders provide improved performance and faster heat up times through the use of plate heat exchanger technology.

These indoor units include the Mitsubishi FTC6 controller which is easy to use and allows for rapid commissioning. Energy monitoring and data logging functions are included as standard.

These pre-packaged cylinders have a sleek, appliance-like appearance and can control up to two heating zones.

They contain an immersion heater which is automatically managed by the FTC6 controller and activated periodically for automatic legionella control.

Cylinder	Litres	Height mm	Width mm	Depth mm	Weight kg	Heating Pipe Connections	CW Pipe Connections	DHW Pipe Connections
EHST17D-VM2D	170	1400	595	680	93	1/4"L 1/2" G	28mm	22mm
EHST17D-VM2D	200	1600	595	680	104	1/4"L 1/2" G	28mm	22mm

Mitsubishi SUZ Split - Control Options

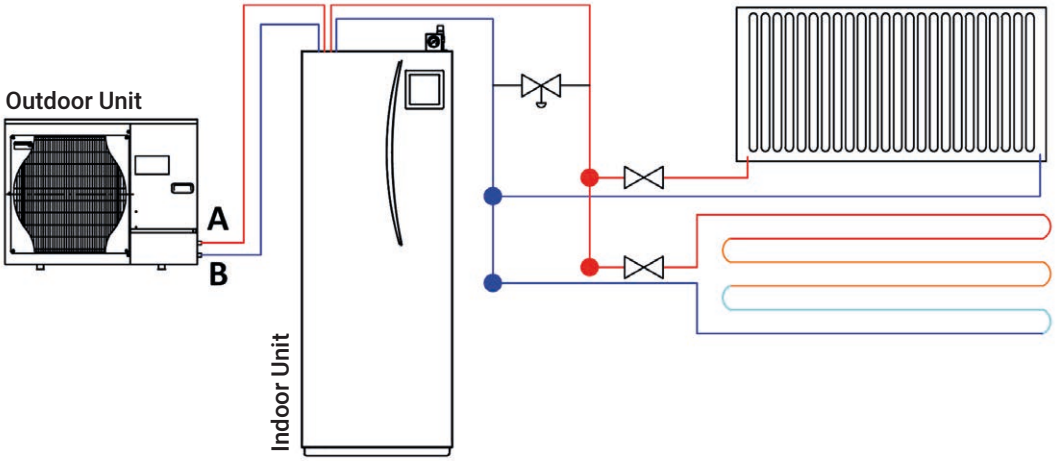
Mitsubishi wireless controller (above). MELCloud (below)

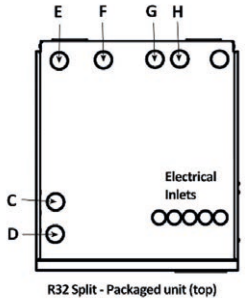
The FTC6 controller manages the operation of the heat pump in heating and hot water mode. It provides time control for up to two heating zones as well as the water heating. It is easy to use and has an intuitive, user friendly animated display. It contains features such as weather compensation, hot water priority and automatic legionella control of the hot water cylinder.

For systems with less than three control zones, we recommend using one Mitsubishi wireless controller per heating zone. When the Mitsubishi wireless thermostats are installed, the FTC6 controller can automatically adapt to usage patterns to optimise comfort as well as the efficiency of the heat pump.

Full system diagnostics are available as well as built-in energy monitoring as standard. All operating data for the previous 6 months is available through the app, such as Electricity consumption, Heat delivered, Water volume heated, Room temperature (if using the wireless thermostats), fault history, etc

Mitsubishi SUZ Split - Illustrative System Schematic





A	Heat Pump Flow	1/2" Flare
B	Heat Pump Return	1/4" Flare
C	Indoor Unit - Heat Pump Flow	5/8" Flare
D	Indoor Unit - Heat Pump Return	3/8" Flare
E	Indoor Unit - System Flow	28mm Compression
F	Indoor Unit - System Return	28mm Compression
G	Indoor Unit - C.W. Inlet	22mm Compression
H	Indoor Unit - D.H.W. Outlet	22mm Compression

Model	SWM40	SWM60	SWM80
System Min. Water Quantity	29 L	37 L	
System Flow Rates l/min	6.5 - 14.3		7.8 - 21.5
Gas Precharge	Up to 7m		
Extra Gas Requirement	25g per m after 7m		
Distance between indoor & outdoor units	5-30M		
Max. height between indoor and outdoor units	30m		

Mitsubishi Ecodan Split (PUD)

The Mitsubishi PUD-SHWM-VAA split type heat pumps are a high quality heat pump from the world's leading heat pump manufacturer, Mitsubishi Electric. They use R32 refrigerant.

Three versions are available, which can produce 8.0kW, 10.0kW or 12.0 kW of heat when it is 2°C outside but can operate efficiently with outside temperatures as low as -25°C.

The split heat pumps have an external part, mounted outside the home and an internal part connected together by refrigerant tubing. They need a single-phase power supply. The outside part is electrically linked to inside by a 4 core cable. The PUD-SHWM-VAA are low maintenance and quiet in operation. They are supplied with 2-zone energy efficient space heating control.

Mitsubishi Ecodan heat pumps feature the Mitsubishi FTC6 controller which has an easy to use graphical display and allows all aspects of the heat pump to be controlled. It includes features such as weather compensation and hot water priority as standard.

The FTC6 controller can control up to two heating zones and will automatically manage hot water production and legionella control. It has an in-built energy monitoring function along with the ability to record all the operating parameters of the heat pump for the last six months to an in-built SD card.

Mitsubishi Melcloud is a popular accessory which allows access to and control of all aspects of the system using an easy-to-use app. When used in conjunction with one or more Mitsubishi wireless controllers and a wireless receiver, it also allows control of the heating zones remotely and will record and display all temperatures within the home for the previous six months.

FTC6 controller (comes on indoor unit overleaf)

Ecodan	Capacity kW @ A2/W35	Height mm	Width mm	Depth mm	Weight kg	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Refrigerant
PUD-SHWM80VAA	8	1050	1020	480	102	1/4"L 1/2" G	42	22	25	R32
PUD-SHWM100VAA	10	1020	1050	480	108	1/4"L 1/2" G	44	26	30	R32
PUD-SHWM120VAA	12	1020	1050	480	108	1/4"L 1/2" G	46	28	32	R32

Mitsubishi PUD Split - Pre-packaged cylinders

The Mitsubishi range of pre-packaged split cylinders provide improved performance and faster heat up times through the use of plate heat exchanger technology.

These indoor units include the Mitsubishi FTC6 controller which is easy to use and allows for rapid commissioning. Energy monitoring and data logging functions are included as standard.

These pre-packaged cylinders have a sleek, appliance-like appearance and can control up to two heating zones.

They contain an immersion heater which is automatically managed by the FTC6 controller and activated periodically for automatic legionella control.

Cylinder	Litres	Height mm	Width mm	Depth mm	Weight kg	Heating Pipe Connections	CW Pipe Connections	DHW Pipe Connections
EHST17D-VM2D	170	1400	595	680	93	1/4"L 1/2" G	28mm	22mm
EHST17D-VM2D	200	1600	595	680	104	1/4"L 1/2" G	28mm	22mm

Mitsubishi PUD Split - Control Options

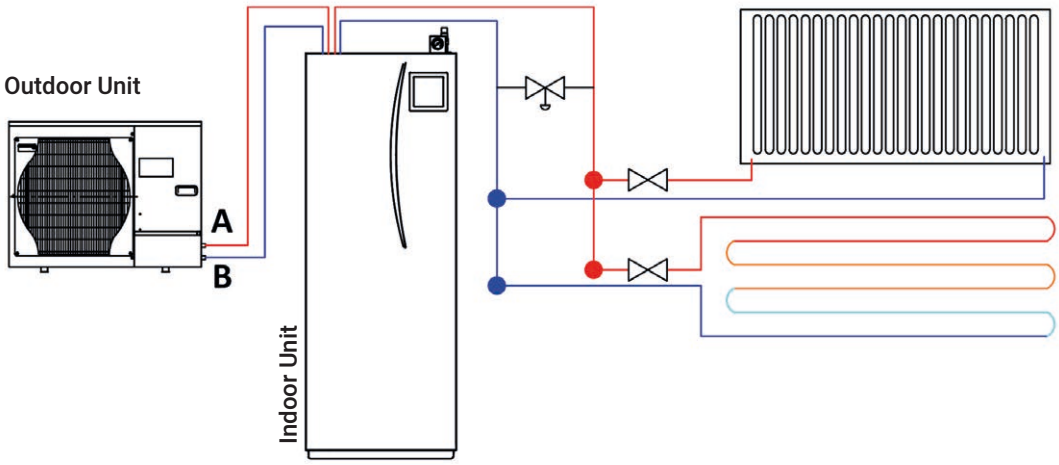
Mitsubishi wireless controller (above). MELCloud (below)

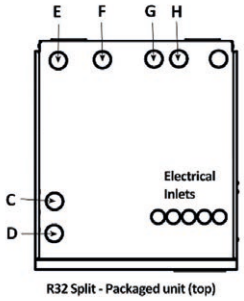
The FTC6 controller manages the operation of the heat pump in heating and hot water mode. It provides time control for up to two heating zones as well as the water heating. It is easy to use and has an intuitive, user friendly animated display. It contains features such as weather compensation, hot water priority and automatic legionella control of the hot water cylinder.

For systems with less than three control zones, we recommend using one Mitsubishi wireless controller per heating zone. When the Mitsubishi wireless thermostats are installed, the FTC6 controller can automatically adapt to usage patterns to optimise comfort as well as the efficiency of the heat pump.

Full system diagnostics are available as well as built-in energy monitoring as standard. All operating data for the previous 6 months is available through the app, such as Electricity consumption, Heat delivered, Water volume heated, Room temperature (if using the wireless thermostats), fault history, etc

Mitsubishi PUD Split - Illustrative System Schematic





A	Heat Pump Flow	1/2" Flare
B	Heat Pump Return	1/4" Flare
C	Indoor Unit - Heat Pump Flow	5/8" Flare
D	Indoor Unit - Heat Pump Return	3/8" Flare
E	Indoor Unit - System Flow	28mm Compression
F	Indoor Unit - System Return	28mm Compression
G	Indoor Unit - C.W. Inlet	22mm Compression
H	Indoor Unit - D.H.W. Outlet	22mm Compression

Model	SHWM80	SHWM100	SHWM120
System Min. Water Quantity	37 L	28 L	
System Flow Rates l/min	9.0 - 22.9	14.3 - 34.4	
Gas Precharge	Up to 15m		
Extra Gas Requirement	20g per m after 15m		
Distance between indoor & outdoor units	5-30M		
Max. height between indoor and outdoor units	30m		

Mitsubishi Ecodan Hydrodan W/W

The Mitsubishi Ecodan Hydrodan is a water to water heat pump, designed to produce heating and hot water in residential apartments.

The Hydrodan has been designed to operate with inlet water from a primary loop system operating between 10-30°C. The primary loop is typically supplied by large capacity central heat pump plant.

Each apartment has a dedicated Hydrodan which is responsible for producing the heating and hot water for the individual apartment. Balancing is simple as each Hydrodan includes a PICV inlet valve.

The Hydrodan builds on Mitsubishi Electric's long experience with Ecodan heat pumps and many of the features and technologies are similar. Mitsubishi Hydrodan heat pumps feature the well regarded Mitsubishi FTC6 controller which has an easy to use graphical display and allows all aspects of the heat pump to be controlled. It includes features such as weather compensation and hot water priority as standard.

The FTC6 controller can control up to two heating zones and will automatically manage hot water production and legionella control. It has an in-built energy monitoring function along with the ability to record all the operating parameters of the heat pump for the last six months to an in-built SD card.

Mitsubishi Melcloud is a popular accessory which allows access to and control of all aspects of the system using an easy-to-use app. When used in conjunction with one or more Mitsubishi wireless controllers and a wireless receiver, it also allows control of the heating zones remotely and will record and display all temperatures within the home for the previous six months.

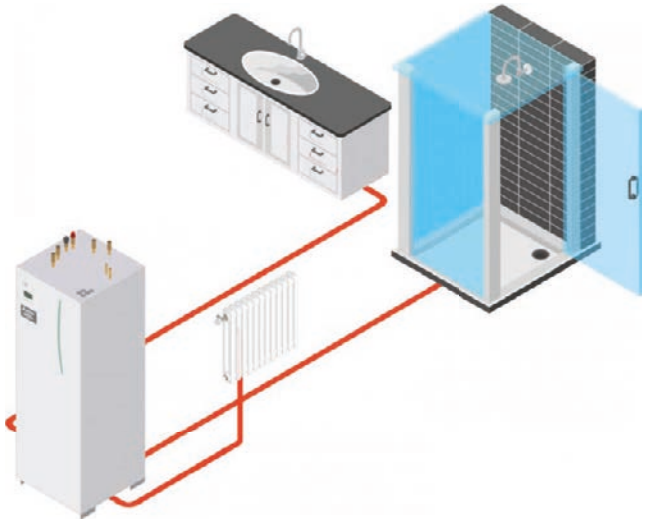
MITSUBISHI ELECTRIC
ecodan
Advanced Heating Technology

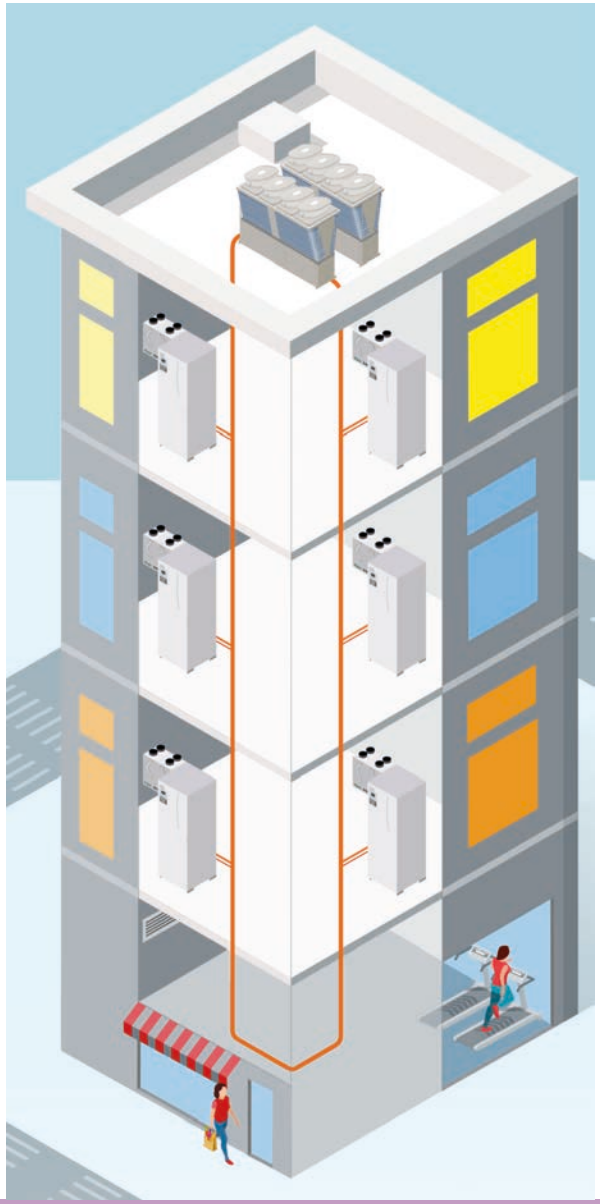
R32

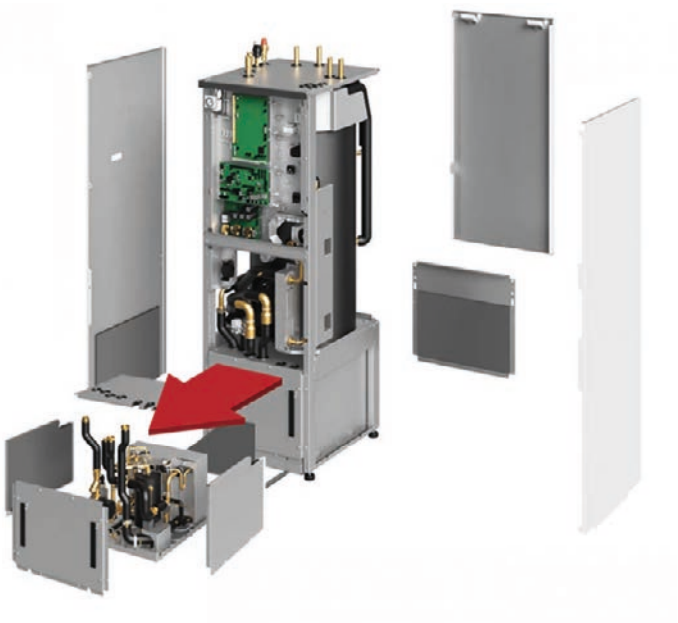
Ecodan	Capacity kW L20 - W35/45/55	Capacity kW L25 - W35/45/55	Weight kg empty
EHWT17D-MHEDW	8.0 / 7.5 / 6.3	9.3 / 8.5 / 6.8	166

Ecodan	Pipe Connections	Noise SPL @ 1m	Max Current A	Breaker Size A	Refrigerant
EHWT17D-MHEDW	22/28mm	27	16*	16*	R32

**Note 3kW immersion requires a separate 20A supply.*







Mitsubishi Ecodan Hydrodan - Control Options

Mitsubishi wireless controller (above). MELCloud (below)

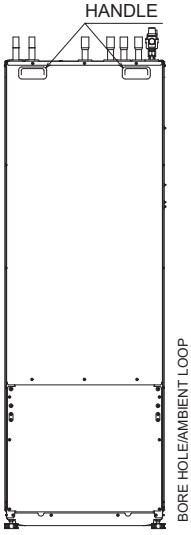
The FTC6 controller manages the operation of the heat pump in heating and hot water mode. It provides time control for up to two heating zones as well as the water heating. It is easy to use and has an intuitive, user friendly animated display. It contains features such as weather compensation, hot water priority and automatic legionella control of the hot water cylinder.

For systems with less than three control zones, we recommend using one Mitsubishi wireless controller per heating zone. When the Mitsubishi wireless thermostats are installed, the FTC6 controller can automatically adapt to usage patterns to optimise comfort as well as the efficiency of the heat pump.

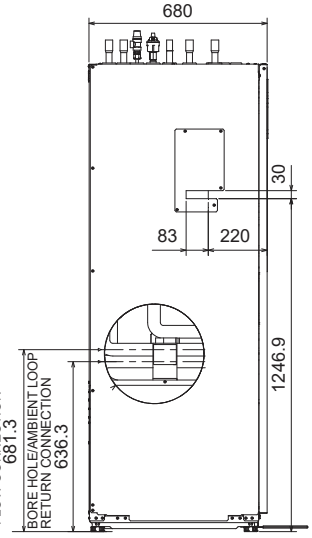
Full system diagnostics are available as well as built-in energy monitoring as standard. All operating data for the previous 6 months is available through the app, such as amount of Electricity consumed, Heat delivered, Water heated, Room temperature (if using the wireless thermostats), fault history, etc

Dimensions and Connections

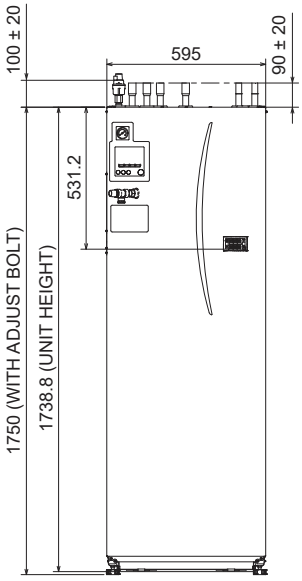
REAR VIEW



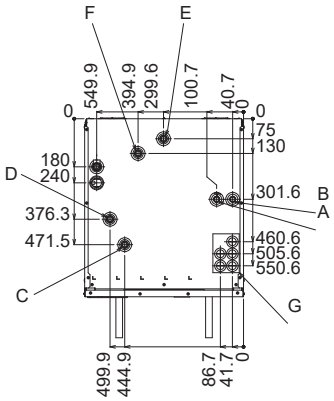
LEFT SIDE VIEW



FRONT VIEW



UPPER VIEW



Letter	Pipe description	Connection size/type
A	DHW outlet connection	22 mm/Compression
B	Cold water inlet connection	22 mm/Compression
C	Space heating return connection	28 mm/Compression
D	Space heating flow connection	28 mm/Compression
E	Ambient loop return connection	28 mm/Compression
F	Ambient loop flow connection	28 mm/Compression

Heat Pump Accessories

Mounting options

Mounting is typically done using wall mounting brackets (to max 8kW approx) or flexi-feet - all models.

HDG (Galvanised steel) heat pump brackets offer a sturdy and secure permanent wall mount while Flexi-feet contain a metal channel embedded in a black rubber base to provide safe and secure mounting for equipment.

Flexible connectors

A complete range of flexible connectors is available for Immergas and Mitsubishi heat pumps. They eliminate the effects of vibration during operation and are an essential component of any heat pump installation.

Split piping

A range of pre-insulated twin refrigerant pipe is available - in a range of pipe sizes to suit all configurations. Piping is typically supplied as a 25m roll to minimise the need for brazing pipes on-site

Protective Guards

Weather-resistant steel mesh guards impede vandalism and prevent accidental damage of your heat pump installation. Suitable sizes are available for all Immergas and Mitsubishi heat pumps.

Features:

- All panels can be removed for maintenance by unscrewing just four bolts
- Additional bottom and back panels are available for stand-alone/high wall options
- All bolts are allen-headed for added security
- Quick and easy to install and access for maintenance
- Textured finish in RAL7032

Guard Selection:

Find the heat pump model in the table and select guard size from the top row. If the model you require is not listed then please contact us for details.

Standard CG-M	Standard CG-XL	CG-900-XXL
Audax 6 / 8	PUD-SHWM80VAA	PUZ-WM60/85/112VAA
SUZ-SWM40/60/80VA	Magis Pro 12/14/16 V2	PUD-SHWM100/120VAA
PUZ-WM50VHA	Magis Combo 12/14/16 V2	
Magis Pro 4/6/9 V2		
Magis Combo 9 V2		

Other Accessories

A complete range of other accessories is also available. This includes Concentrated heat transfer fluid for Air and Ground Source Heat Pumps (antifreeze protection down to -14°C), and Magnetic filters.

Please contact us for more details.

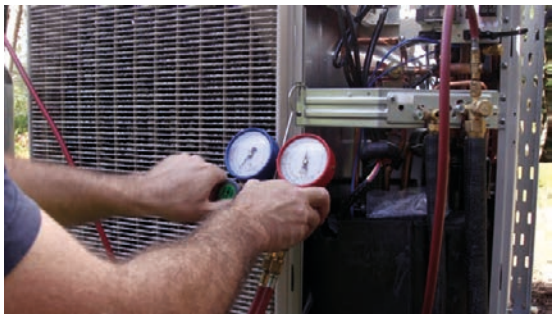
Commissioning and F-Gas Services

A full range of heat pump and F-Gas services can be arranged via our dedicated in-house Heat Pump Technical Services team or via our approved service agents.

Services include:

- Heat pump commissioning
- Installation of split refrigeration pipework
- Charging of refrigeration pipework
- Heat pump servicing
- Heat pump troubleshooting
- Leak detection and repair
- F-Gas reclamation and disposal

Please contact us for more information.



EPH Ember Controls

THE EPH Ember TS range of wireless thermostats allows up to 6 heating zones to be controlled from one easy-to-use app.

Simply install one CP4i Smart thermostat per zone and use the included receivers to simplify wiring. The thermostats are paired to a Wifi gateway which connects to the internet through the home wifi.

Benefits:

- Control your heating anytime from anywhere using the easy-to-use EMBER App
- Multiple users may be added and multiple homes can be controlled via one account.
- Reduces energy bills with full time & temperature control
- Up to 6 time and temperature periods per day.
- Thermostats work offline if no internet access available.
- Works with Alexa
- ErP Class V (+3%)
- 5 year warranty as standard

MELCloud™ for Mitsubishi Ecodan

MELCloud for fast, easy remote control, and monitoring of your ECODAN

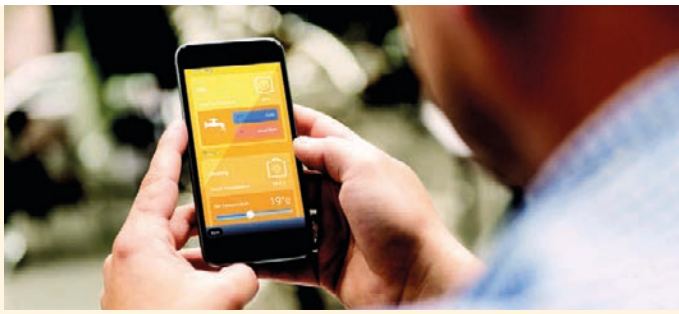
MELCloud is a smart app solution for controlling ECODAN either locally or remotely by computer, tablet or smartphone via the Internet.

Setting up and remotely operating your ECODAN heating system via MELCloud is simple and straight forward. All you need is wireless computer connectivity in your home or the building where the ECODAN is installed and an Internet connection on your mobile or fixed terminal.

To set up the system, the ECODAN WiFi interface must be installed and paired to your wifi, which is done simply and quickly using the WPS button found on all mainstream routers.

You can control and check your ECODAN via MELCloud from virtually anywhere an Internet connection is available.

That means, thanks to MELCloud, you can use ECODAN much more easily and conveniently.

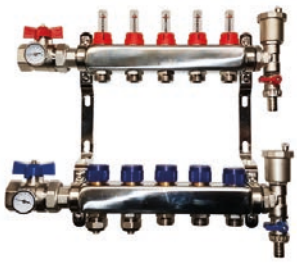


Key control and monitoring features

- Turn system on/off
- See status of each of your heating zones & adjust set points
- See the status of your hot water cylinder & boost remotely
- Live weather feed from ECODAN location
- Holiday mode - Set system parameters while away
- Schedule timer - Set 7 day weekly schedule
- Frost protection - Set system to run at minimum temperature
- Error status
- Check energy usage reports*

*Additional measuring hardware may be required for MID data.

Wet underfloor heating systems



These systems are suitable for installation in a new build or retro-fit where a new floor is being installed. Just send us details of the dwelling and we will produce a design for you. We supply all the components you need to complete your underfloor heating system. This includes our multilayer PERT-AL-PERT pipe, manifold and all necessary rails, and clips.

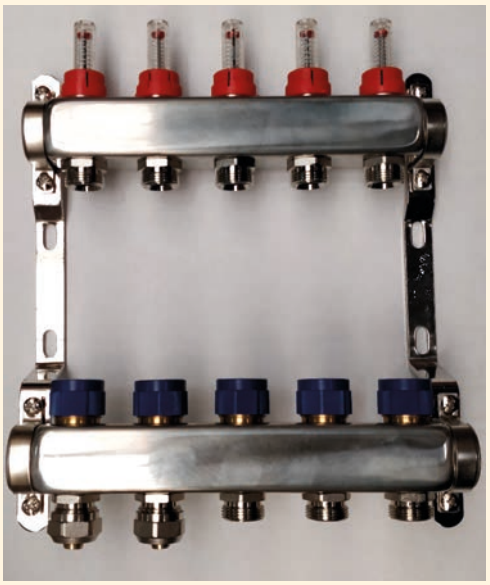
The underfloor packages contain:

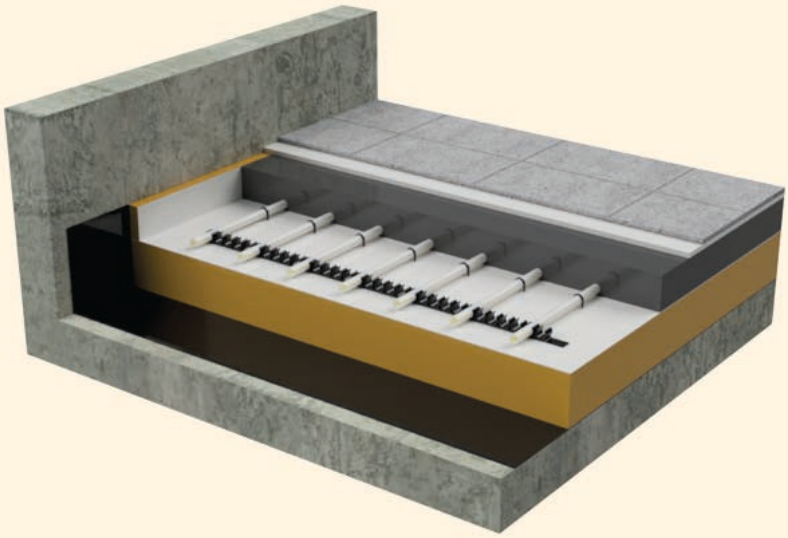
- 16mm PERT-AL-PERT underfloor pipe
- Manifold kit including isolation valves, temperature gauges, air vents and drain points.
- 16-18mm Rapid Rail (2M lengths)
- 60mm manual rail red clips
- 60mm black clips

Please Note:

Packages are sized and quoted based on each project's specifications, please email your enquiry to info@rvr.ie

RVR ENERGY TECHNOLOGY



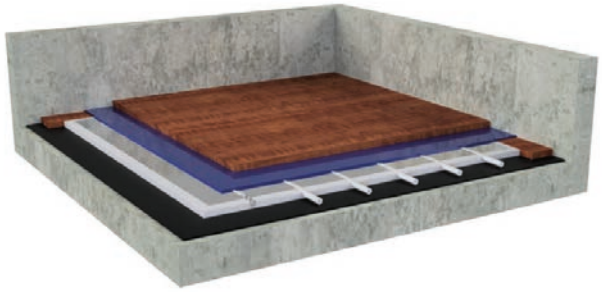


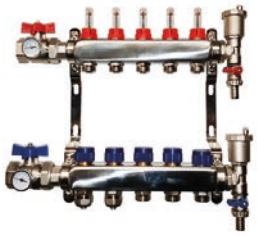
RECOMMENDATIONS	
Pipe Centres	150mm / 6" It is permitted to use a narrower centre-to-centre distance in rooms such as conservatories which may have a high heat loss.
Maximum pipe length	Maximum of 100m per circuit
Circuit orientation	May be laid in any orientation, e.g. E/W, N/S, etc
Typical Coverage areas	Heat pump = 150mm / 6" centres = 12m^2 per 100m pipe Boiler = 200mm / 8" centres = 15m^2 per 100m pipe
Design parameters	Typical flow temperature 35°C. Target ΔT of 5°C on heat pump systems
Screed depth	Min. 75mm above pipe. 100mm / 4" from insulation to finished floor.

Low-profile Dry underfloor heating systems

These packages are a great solution when it comes to installing underfloor heating in a retro-fit application.

These packages do not require screed to be poured, saving money and time on-site. An EPS carrier board is placed directly on the sub-floor and the pipes are pressed into the pre-cut channels. These systems have a much lower height than a standard underfloor system, making them ideal for retro-fit applications in both domestic and commercial applications (new floor is only 25mm higher after installation).





We supply all the components you need to complete your underfloor heating system. This includes our multilayer PERT-AL-PERT pipe, manifold and EPS carrier boards with aluminium foil top layer.

The underfloor packages contain:

- 16mm PERT-AL-PERT underfloor pipe
- Manifold kit including isolation valves, temperature gauges, air vents and drain points.
- EPS carrier boards with aluminium foil top layer
- Mesh underlay for tile installation, if required.

This system is suitable for installation under tiles or engineered wood / laminate floors. For tile installation, we recommend the use of a special tile adhesive with a liquid polymer additive which is approved for use in such applications. Contact us for more information.

Please Note: Packages are sized and quoted based on each project's specifications, please email your enquiry to info@rvr.ie

RVR ENERGY TECHNOLOGY

Wall, Ceiling and Floor heating system

This low-profile PE-RT heating system is ideal for use in wall heating applications but may also be used in ceiling heating and underfloor applications. It provides a fast, reliable and minimally intrusive installation.

The use of ultra low-profile 8mm pipe (with vapour barrier) along with a compact plastic and copper mesh composition make it possible to achieve minimum plaster or screed depths of 15mm.

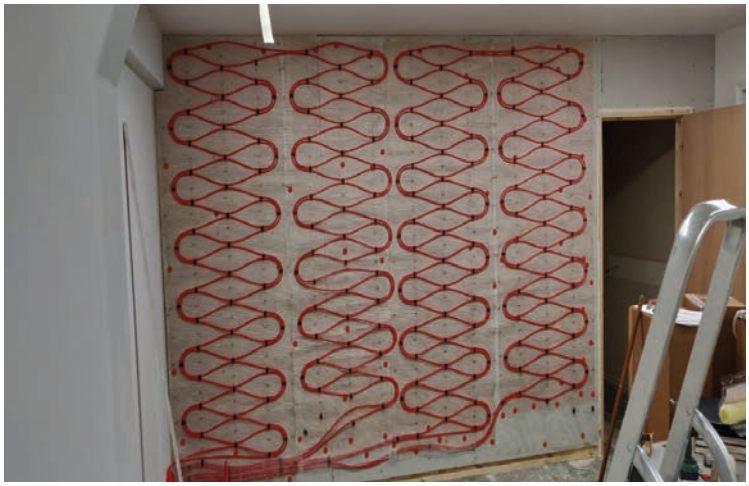
In a wall heating application, standard bonding coat with a regular skim topcoat may be used. The heating system is suitable for use on any wall surface. If plaster will adhere to the surface, then the heating mats may be used. The inclusion of a copper mesh layer on the top of the mat provides a strong structure for the plaster to adhere to and the rear plastic mesh allows the bonding coat to permeate the entire mat.

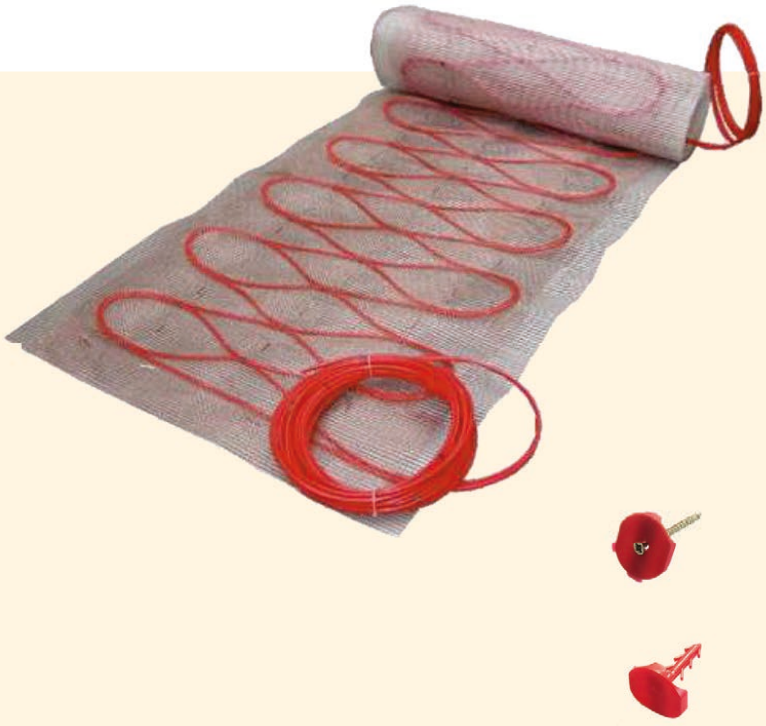
The mats may be clipped in place using either a screw clip or a plasterboard clip. On a partition wall, affix the screw clips at the studs and use plasterboard clips wherever else pipe retention is needed.

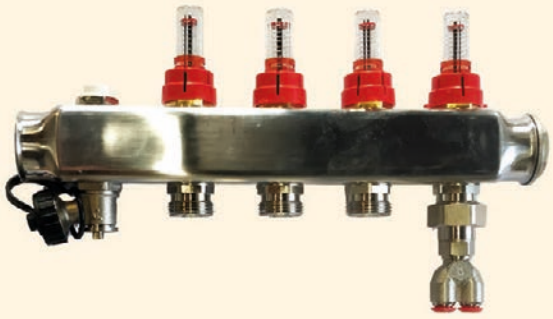
These 1m x 4.5m mats provide 80W of output per m^2. The mesh (but not the pipes) may be cut at any point and the mats rotated to fit the wall space. Should a mat need to be shortened to fit the space, the mesh may simply be cut and removed.

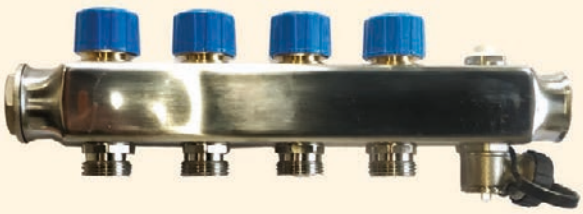
Each mat contains two sets of flow and return pipes operating in a counter-flow arrangement. As a result, it is necessary to bring the two sets of pipes back to the manifold for connection. The pipes use a Eurocone type push fit connector. Either two or four pipes may be joined using an adapter at each port on the manifold, allowing up to two mats to be used per port.

Please contact us if you require further technical information.









Diecast Aluminium Radiators

Faral patented the concept of diecast aluminium radiators in 1966 and have become Europe's leading radiator brand. The rounded and curved surfaces of these Faral Alliance radiators combine aesthetics, functionality and performance.

They have the large surface area and output that are ideal for use with modern heat pump systems.

The radiators are available in four models - 350, 500, 600 and 800 (model name refers to centre-to-centre height), and in assemblies of 4, 8, 10 or 12 sections.

FARAL® radiatori italiani dal 1966

- High surface area radiator suitable for use with modern low temperature heating systems.
- Modern, aesthetic design.
- Tough radiator ideal for all home environments.
- Exceptionally high quality finish using electrostatically applied epoxy polyester powder.
- Complies with the European Standard UNI EN 442-2
- Alliance radiators are available in white - RAL 9010.
- Guaranteed for 10 years from installation.

Specifications
Material: Die cast aluminum
Connections: 1" nipples
Operating Pressure: 6 bar
pH: 6 to 8.5
Max Temperature: 90°C

Model	No of Sections	Height (mm)	Width (mm)	Distance between Centres	Depth (mm)	Output@ Δ T 50 °C (W)	Output@ Δ T 30 °C (W)	Water Content (L)	Max Operating Pressure (bar)
Alliance 350	4	430	320	350	95	368	192	1	6
Alliance 350	8	430	640	350	95	736	384	2	6
Alliance 350	10	430	800	350	95	920	480	2.5	6
Alliance 350	12	430	960	350	95	1104	576	3	6
Alliance 500	4	580	320	500	95	496	244	1.36	6
Alliance 500	8	580	640	500	95	992	488	2.72	6
Alliance 500	10	580	800	500	95	1240	610	3.4	6
Alliance 500	12	580	960	500	95	1488	732	4.08	6
Alliance 600	4	680	320	600	95	568	288	1.56	6
Alliance 600	8	680	640	600	95	1135	576	3.12	6
Alliance 600	10	680	800	600	95	1420	720	3.9	6
Alliance 600	12	680	960	600	95	1704	864	4.68	6
Alliance 800	4	880	320	800	95	708	348	1.96	6
Alliance 800	8	880	640	800	95	1416	696	3.92	6
Alliance 800	10	880	800	800	95	1770	870	4.9	6
Alliance 800	12	880	960	800	95	2124	1044	5.88	6

Condor Tower Radiators

The Faral Condor series of die-cast aluminium radiators is designed to offer the heating market a slim and elegant radiator design.

They are suitable for furnishing any room and will meet many interior design needs due to their extended height and "classic modern lines".

FARAL® radiatori italiani dal 1966

- Extended height
- Modern and elegant design
- Ideal for all environments.
- Exceptionally high quality finish.
- Condor radiators are available in white.
- Guaranteed for 10 years from installation.

Specifications
Material: Die cast aluminum
Connections: 1" nipples
Operating Pressure: 6 bar
pH: 6 to 8.5
Max Temperature: 90°C
Standard Colour: RAL 9010 Faral

Model	No of Sections	Distance between Centres (mm)	Height (mm)	Width (mm)	Depth (mm)	Output@ Δ T 50 °C (W)	Output@ Δ T 30 °C (W)	Water Content (L)	Max Operating Pressure (bar)
Condor 1600	3	1600	1642	240	80	744	372	1.86	6
Condor 1600	5	1600	1642	400	80	1240	620	3.1	6
Condor 2000	3	2000	2042	240	80	879	408	2.25	6
Condor 2000	5	2000	2042	400	80	1465	735	3.75	6

Towel Radiators

The Faral Arko Chrome and Arko white are towel rails made of high quality steel with a 'bright chrome' or soft painted white finish. They combine heating functionality and elegance in terms of interior decor. Ideal for bathrooms, kitchens, saunas, hotels, hospitals etc.

- Available in a range of sizes.
- Modern and elegant design.
- Chromium plated or Soft White painted.
- Radiused profiles for safety against domestic accidents.
- Manufactured under meticulous quality control.
- Guaranteed for 6 years from installation.
- Fittings pack is included in box.

FARAL® radiatori italiani dal 1966

Model	Total height [mm]	Width [mm]	Distance between centers [mm]	Heat output EN442 Δ t= 50 K Watt	Heat output EN442 Δ t= 30 K Watt
Arko Chrome	800	450	400	227	123
Arko Chrome	1200	450	400	376	203
Arko Chrome	1400	450	400	446	241
Arko Chrome	1800	450	400	569	307
Arko Chrome	800	500	450	253	137
Arko Chrome	1200	500	450	397	215
Arko Chrome	1400	500	450	490	265
Arko Chrome	1800	500	450	621	335
Arko Chrome	800	550	500	277	150
Arko Chrome	1200	550	500	450	243
Arko Chrome	1400	550	500	535	289
Arko Chrome	1800	550	500	672	363
Arko Chrome	800	600	550	302	163
Arko Chrome	1200	600	550	475	257
Arko Chrome	1400	600	550	560	302
Arko Chrome	1800	600	550	697	375

Model	Total height [mm]	Width [mm]	Distance between centers [mm]	Heat output EN442 Δ t= 50 K Watt	Heat output EN442 Δ t= 30 K Watt
Arko White	800	450	400	324	175
Arko White	1200	450	400	510	276
Arko White	1400	450	400	626	338
Arko White	1800	450	400	834	451
Arko White	800	500	450	368	200
Arko White	1200	500	450	567	307
Arko White	1400	500	450	665	361
Arko White	1800	500	450	915	494
Arko White	800	550	500	429	233
Arko White	1200	550	500	671	363
Arko White	1400	550	500	788	425
Arko White	1800	550	500	995	538
Arko White	800	600	550	456	247
Arko White	1200	600	550	717	388
Arko White	1400	600	550	841	455
Arko White	1800	600	550	1065	576

Fan Coil Radiators – Wall Mounted

The Immergas Hydro FS is a modern range of variable speed fan coil units which are ideal for use with low temperature applications. They are ideal for use with heat pumps.

The Hydro FS is a floor standing unit available in 5 capacities, with outputs of up to 4.4kW at 45°C

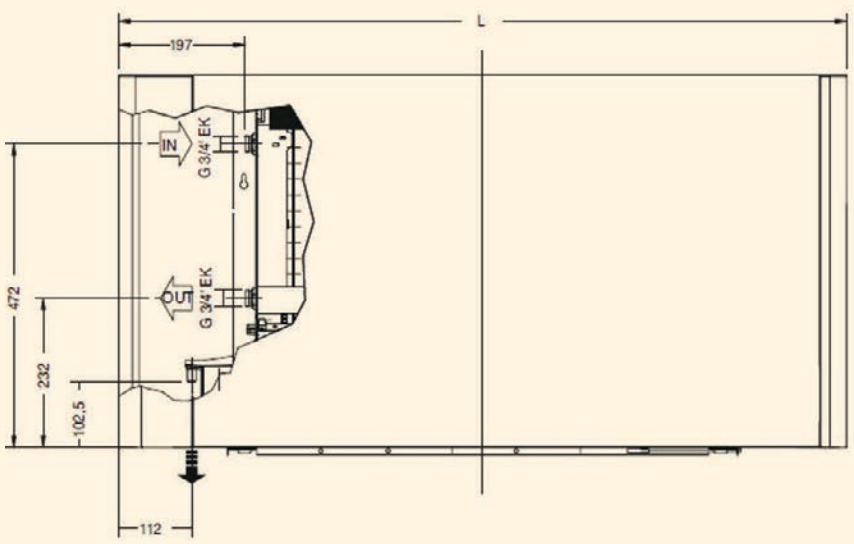
A range of valves and connection kits are available, including a two way valve and three way valves for where bypass is required.

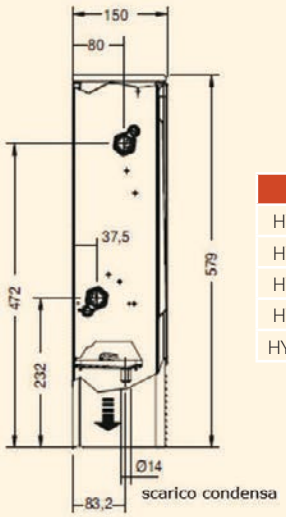
Control options include four speed, smart modulating and even 0-10V control.

Their narrow depth of just 150mm makes them suitable for use in almost any room.

- Elegant aesthetics with white painted casing
- Reduced depth for integration into any living area
- Flow and return connections on the left side (with possibility of reversing to the right)
- Bottom air intake (with a minimum level of respect - 20 cm from the floor)
- Very low noise thanks to the tangential fan and DC INVERTER motor
- Installation template and wall brackets as standard
- Flat adapters as standard and 3/4" hydraulic connections

55°C A++ 35°C A++





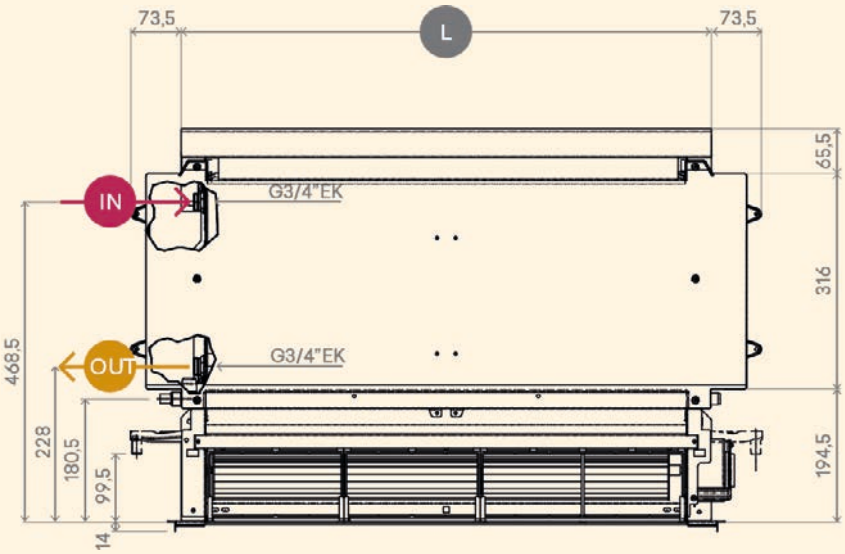
Model	Width	Weight
HYDRO FS 200	735	17
HYDRO FS 400	935	20
HYDRO FS 600	1135	23
HYDRO FS 800	1335	26
HYDRO FS 1000	1535	29

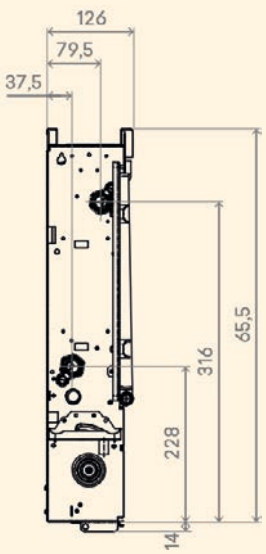
	Capacity at 45/40°C kW	Capacity at 70/60°C kW	Water Flow Rate l/h	Weight kg	Max airflow m3/h	Max current input A
Hydro FS 200	0.97	1.89	130	17	146	0.11
Hydro FS 400	2.17	3.99	304	20	294	0.16
Hydro FS 600	3.11	5.47	497	23	438	0.18
Hydro FS 800	3.88	6.98	551	26	567	0.26
Hydro FS 1000	4.37	8.3	642	29	663	0.28

Fan Coil Radiators – Integrated

Hydro IN is the in-wall or in-ceiling version of the Hydro FS. It shares common capacities up to 4.4kW at 45°C.

IMMERGAS





Model	L (mm)
200	378
400	578
600	778
800	978
1000	1178

- Depth 126 mm, height 655 mm;
- Width from 525 to 1325 mm;
- **Delivery and return connections on the left** (market standard);
- **Double condensate collection system as standard**, for vertical or horizontal installation.

	Capacity at 45/40°C kW	Capacity at 70/60°C kW	Water Flow Rate l/h	Weight kg	Max airflow m3/h	Max current input A
Hydro IN 200	0.97	1.89	130	17	146	0.11
Hydro IN 400	2.17	3.99	304	20	294	0.16
Hydro IN 600	3.11	5.47	497	23	438	0.18
Hydro IN 800	3.88	6.98	551	26	567	0.26
Hydro IN 1000	4.37	8.3	642	29	663	0.28

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