



Why Vaillant?

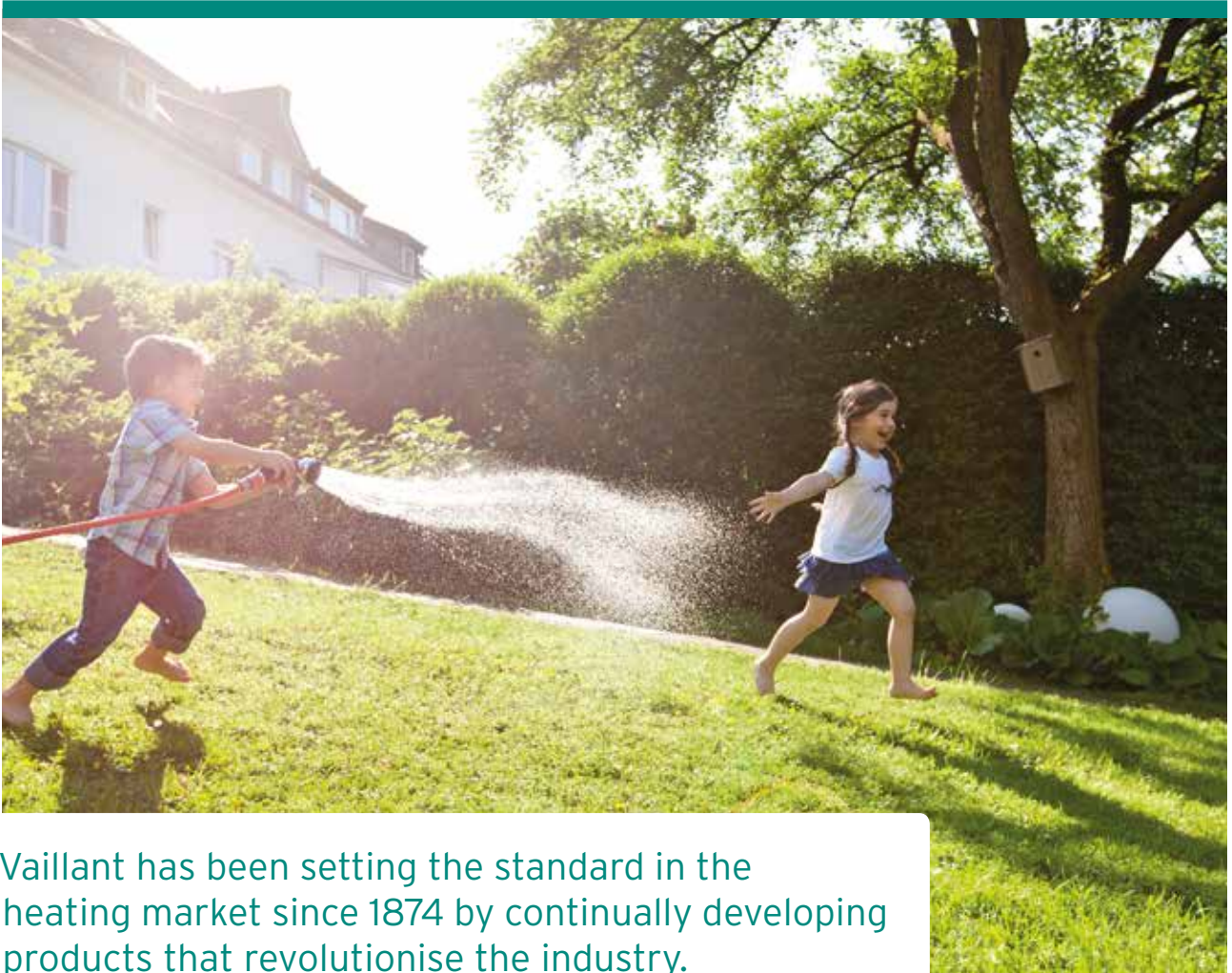
Because saving energy can be so easy

aroTHERM air-to-water heat pump

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Vaillant has been setting the standard in the heating market since 1874 by continually developing products that revolutionise the industry.

Today, our innovative solutions are still setting the standard in the heating marketplace. We have produced a comprehensive range of renewable technologies designed to utilise sustainable sources of energy.

Our products are at the very forefront of technology and deliver on the Vaillant promise to 'think ahead', safeguarding our planet for future generations whilst delivering energy efficient products that can reduce the cost of providing heating and hot water to the home.

Every product developed by Vaillant is routinely subjected to rigorous materials analysis, robustness testing, lifetime testing and acoustics analysis. This meticulous and unremitting commitment to quality is evident at every stage in the product development process, which is applied to every spare part that we sell.

Furthermore, we are committed to finding new and ever more imaginative ways to provide service excellence before, during and long after the installation of Vaillant appliances. We strongly believe that the most advanced heating solutions on the market demand the most forward-thinking service solutions - that is why we pride ourselves on our unrivalled service support.



Air-to-water heat pumps are becoming an increasingly popular choice for those looking to install renewable products in the home. The main advantage of air-to-water heat pumps is that they can help safeguard against the fluctuations in oil and LPG prices that leave homeowners vulnerable to the ever-rising costs of heating their home.

The air-to-water pumps can be integrated into UK heating systems with ease, causing minimal disruption to the homeowner. They also eliminate the need for on-site fuel storage and can be used as part of an efficient all-electric heating solution. Furthermore, air-to-water heat pumps offer excellent energy savings compared to alternatives like standard electric, LPG or oil, especially as all Vaillant

heat pumps are MCS accredited and may therefore be eligible for government funding. They can also reduce carbon emissions, whilst offering a more sustainable heating solution than oil and LPG sources.

As experts within the heating industry, Vaillant can help you to develop bespoke heating systems that meet the requirements of even the most complex installations. With our extensive range of products and system accessories, you'd be hard pressed to find another manufacturer that can match our offering of flexible system solutions.



aroTHERM is Vaillant's second generation air-to-water heat pump range. Developed in-line with the exacting standards and precision engineering you would expect when you choose Vaillant.



What's more, with a 'Quiet Mark' award you can be assured knowing the aroTHERM air-to-water heat pump is one of the most understated miracles of engineering we've ever produced.

Key features and benefits

- **Four models**
aroTHERM 5kW, 8kW, 11kW and 15kW
- **Compact size for easy siting**
Possible to fit 5kW, 8kW and 11kW models under a standard window
- **Quiet operation**
'Quiet Mark' approved thanks to its ultra quiet operation. Sound power as low as 58dB(A) (5kW) with permitted planning available as low as three metres
- **Blue fin coated evaporator with anti-hydro coating**
Gives improved performance and extra protection against corrosion
- **Set-up wizard for first installation**
With simple steps to help speed up commissioning
- **Ability to cascade up to seven aroTHERM heat pumps**
Suitable for larger domestic and commercial properties

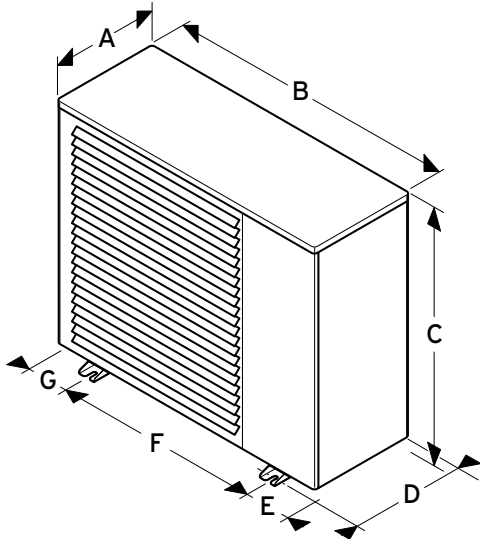
Key

1. Electronic box
2. Condenser
3. Four-way valve
4. CH pump
5. Compressor
6. Gas buffer (refrigerant heat exchanger)
7. Fan
8. Evaporator

- **Solid case design with in-built anti-vandalism measure**
No requirement for extra vandalism cages
- **Wider fin spacing and tray heater**
Improves de-icing efficiency
- **MCS accredited**
Eligible for RHI schemes

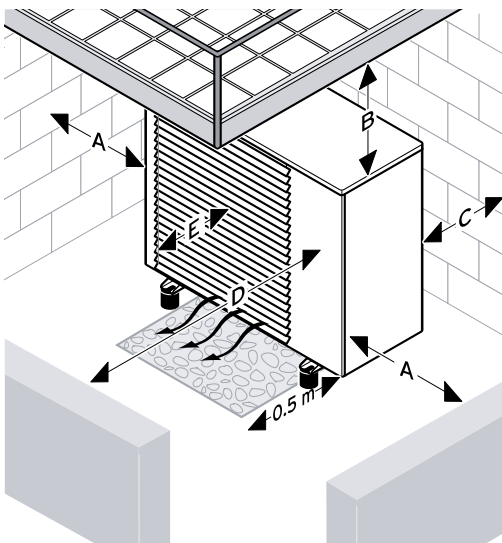


Dimensions



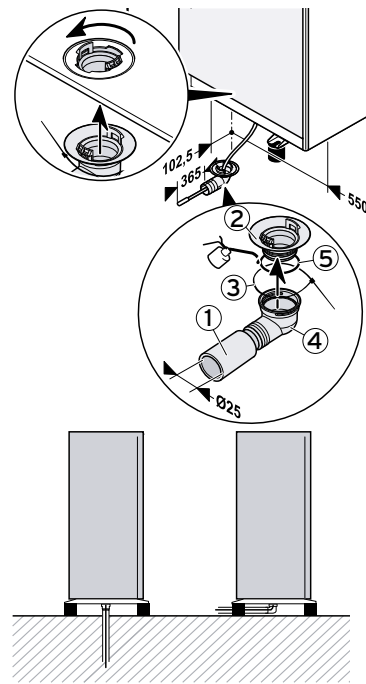
Dimension	Unit	5kW	8kW	11kW	15kW
A	mm	408	463	463	463
B	mm	980	1103	1103	1103
C	mm	840	975	975	1380
D	mm	437	437	437	437
E	mm	120	162	162	162
F	mm	740	778	778	778
G	mm	120	162	162	162

Clearances



Clearance	Unit	For heating mode
A	mm	> 250
B	mm	> 1000
C	mm	> 120
D	mm	> 600
E	mm	> 300

Condensate connections



Connection	Description
1	Condensate drain pipe
2	Adaptor
3	Cable tie
4	Elbow
5	Seal

Technical Data	Unit	aroTHERM 5kW	aroTHERM 8kW	aroTHERM 11kW	aroTHERM 15kW
Article number		0020257346	0020257347	0020257348	0020257349
Heat pump type		Monoblock air-to-water heat pump			
Flow / return heating connections	BSP	1 1/4"			
Product dimensions, width	mm	980	1,103	1,103	1,103
Product dimensions, height	mm	840	975	975	1,380
Product dimensions, depth	mm	408	463	463	463
Net weight	kg	86	102	126	165
Hydraulic lines material		Copper			
Hydraulic connections material		Brass			
Hydraulic seals material		EPDM			
Plate heat exchanger material		AISI 304 stainless steel			
Pump casing material		Painted cast iron			
Supply voltage / frequency	V / Hz	230 / 50			
Fuse type C or D	A	16	16	20	32
Inverter controller fuse	A / V	HRC 20 / 550			
IP rating		IP 25			
Maximum inrush current	A	16	16	20	25
Maximum current consumption	A	16	16	20	25
Pump power consumption	W	15 - 70	15 - 70	15 - 70	6 - 87
Fan power consumption	W	15 - 42	15 - 42	15 - 76	17 - 76 (2 x fan)
Electrical classification		I			
Overvoltage category		II			
Fan rotational speed	rpm	550	550	700	600
Sound power level for A7/W35 according to EN 12102 and EN ISO 9614-1	dB(A)	58	59	65	65
Sound power level for A7/W45 according to EN 12102 and EN ISO 9614-1	dB(A)	58	59	65	65
Sound power level for A7/W55 according to EN 12102 and EN ISO 9614-1	dB(A)	58	60	66	66
Maximum DHW flow temperature	°C	60	63	63	63
Minimum air temperature (heating and cylinder charging)	°C	-15	-20	-20	-20
Maximum air temperature (heating)	°C	28			
Maximum air temperature (cylinder charging)	°C	46			
Maximum air flow	m ³ /h	2,000	2,700	3,400	5,500
Energy-related Products at 35°C*	band	A++	A++	A+	A++
Energy-related Products at 55°C*	band	A+	A++	A+	A+

* when installed with a VRC 700 / VRC 700f

Heating Circuit	Unit	aroTHERM 5kW	aroTHERM 8kW	aroTHERM 11kW	aroTHERM 15kW
Minimum operating pressure	bar	1.0			
Maximum operating pressure	bar	3.0			
Heating circuit water contents in the heat pump	l	1.1	1.6	2.1	2.7
Minimum heating circuit water contents	l	17	21	35	60
Minimum volume flow rate	l/h	380	380	540	1,200
Nominal volume flow rate	l/h	860	1,400	1,900	2,590
Hydraulic pressure difference	mbar	640	450	300	370

NOTE: see page 26 for VRC 700 / VRC 700f system controls



At Vaillant, we believe that everyone should be able to utilise renewable heating technologies, not only to protect the planet, but also to benefit from savings in running costs.

Vaillant has developed the aroTHERM hybrid system for those properties that have heat loss outside the scope of a single heat pump and/or have a relatively new heating system which can be costly to run. aroTHERM hybrid is designed to be operated with the VRC 700 / VRC 700f control. The VRC 700 / VRC 700f features the unique Vaillant triVAI® hybrid management system, which ensures the most efficient generator (air source heat pump, gas, oil or LPG) can be calculated and selected, to help reduce energy consumption and help customers to save money on their bills.

What is triVAI®?

aroTHERM hybrid is controlled via the VRC 700 / VRC 700f* which features Vaillant's triVAI® intelligent tariff selection tool. This ensures the system works as efficiently as possible at all times, whilst automatically selecting the most cost-effective heat source, regardless of the heating and hot water demands the system has to respond to. The VRC 700 / VRC 700f triVAI® feature selects the most cost-effective heat source based on a variety of coexisting variables, and crucially, does not require any intervention from the end user. It achieves this by analysing the Coefficient of Performance of the heat pump, efficiency of the auxiliary boiler and energy tariff prices for each heat source option. This smart approach to integrating renewable technology with existing heating systems offers more scope and flexibility for a wider range of properties.

*VRC 700 / VRC 700f control supplied separately

aroTHERM hybrid heat pump packs for Vaillant boilers

Description	Article number
aroTHERM 5kW hybrid heat pump for Vaillant boiler	0020257350
aroTHERM 8kW hybrid heat pump for Vaillant boiler	0020257351
aroTHERM 11kW hybrid heat pump for Vaillant boiler	0020257352
aroTHERM 15kW hybrid heat pump for Vaillant boiler	0020257353

aroTHERM hybrid heat pump packs for incumbent boilers

Description	Article number
aroTHERM 5kW hybrid heat pump for incumbent boiler	0020257354
aroTHERM 8kW hybrid heat pump for incumbent boiler	0020257355
aroTHERM 11kW hybrid heat pump for incumbent boiler	0020257356
aroTHERM 15kW hybrid heat pump for incumbent boiler	0020257357

NOTE: see page 26 for VRC 700 / VRC 700f system controls

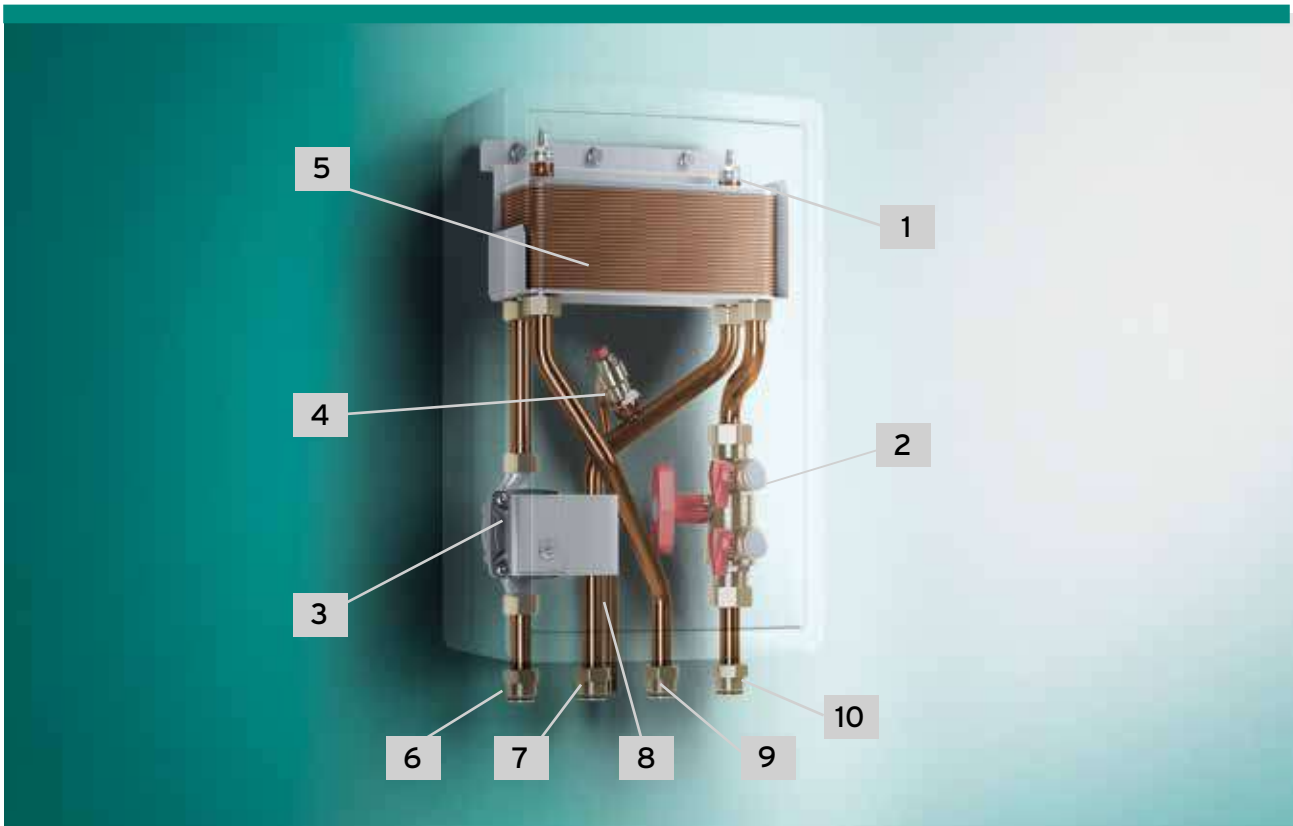
Key features and benefits

- **Unique triVAI® intelligent control system feature controlled via the VRC 700 / VRC 700f**
Three possible energy tariffs can be entered - providing maximum cost savings
- **Excellent green credentials**
Provides significant carbon and energy bill savings
- **Compatible with all boiler systems**
Including gas, oil and LPG
- **Reduced maintenance costs**
Glycol only needed in the outdoor circuit to the heat pump
- **Easy to install and commission**
Uses the Vaillant set-up wizard
- **Suitable for a wide range of properties**
Can be installed in new build properties as well as retrofitted into older properties or those that already use an expensive heating system

Pack components

- 5kW, 8kW, 11kW or 15kW aroTHERM hybrid heat pump
- VWZ MWT 150 heat exchanger module
- VWZ MPS 40 litre decoupler module
- VR 32 eBUS coupler controls address board for use with Vaillant boilers





As the heat pump is fitted outside the property, it is subjected to changing weather conditions and as such, requires the fluid flowing through the heat pump to have frost protection, to ensure that it does not freeze and damage the heat pump. Filling the entire heating system with glycol can be expensive; the heat exchanger module allows connected glycol circuits to be separated from heating circuits. The heat exchanger module will prevent the contamination of glycol circuits in the event that radiators are removed or drained and re-filled. In addition, the heat exchanger module is supplied with integral fill and flush points for a simpler installation.

The forty plates within the module ensure that the energy is transferred from the heat pump circuit to the heating circuit as efficiently as possible. Air bleed vents/valves within the module also help prevent air getting trapped within the system.

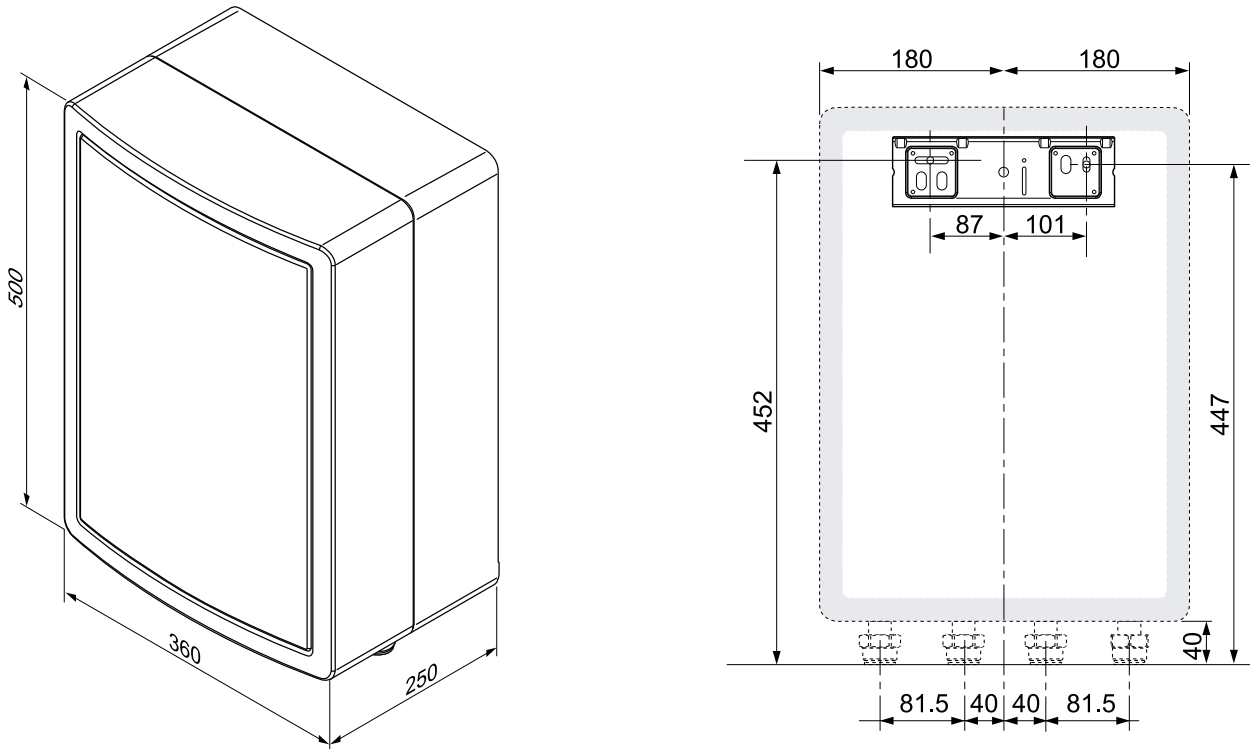
Key features and benefits

- **Designed to separate the heat pump glycol circuit from the heating circuit**
Only a small proportion of the system is required to be filled with glycol
- **Wall-mounted, compact and lightweight**
500mm (H) x 250mm (D) x 360mm (W) for easy and flexible siting
- **Modulating circuit pump ErP A rated**
35% more energy efficient than a standard pump, making the heating circuit ready to comply with future legislation
- **Fill and flush points for the heat pump glycol circuit**
Quick and easy to install with no extra cost

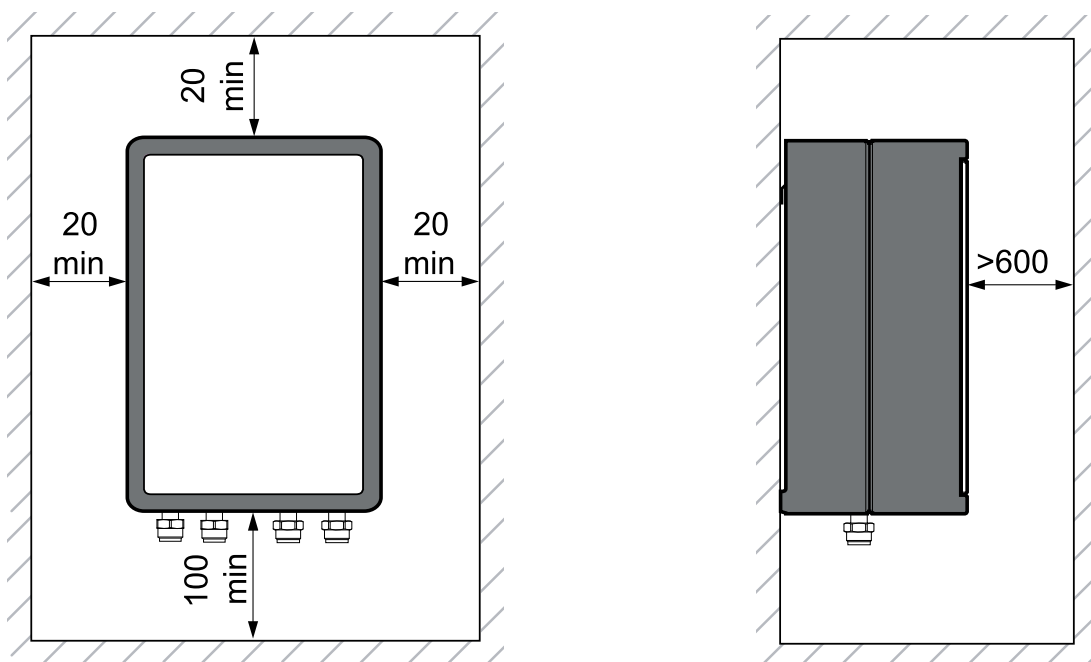
Key

1. Air bleed vent
2. Fill and flush points
3. High efficiency CH pump
4. PRV central heating side
5. Forty plate-to-plate heat exchanger
6. Installation heating circuit inlet 1"
7. Installation heating circuit outlet 1"
8. Safety valve drain
9. Glycol water circuit outlet to heat pump 1"
10. Glycol water circuit inlet from heat pump 1"

Dimensions

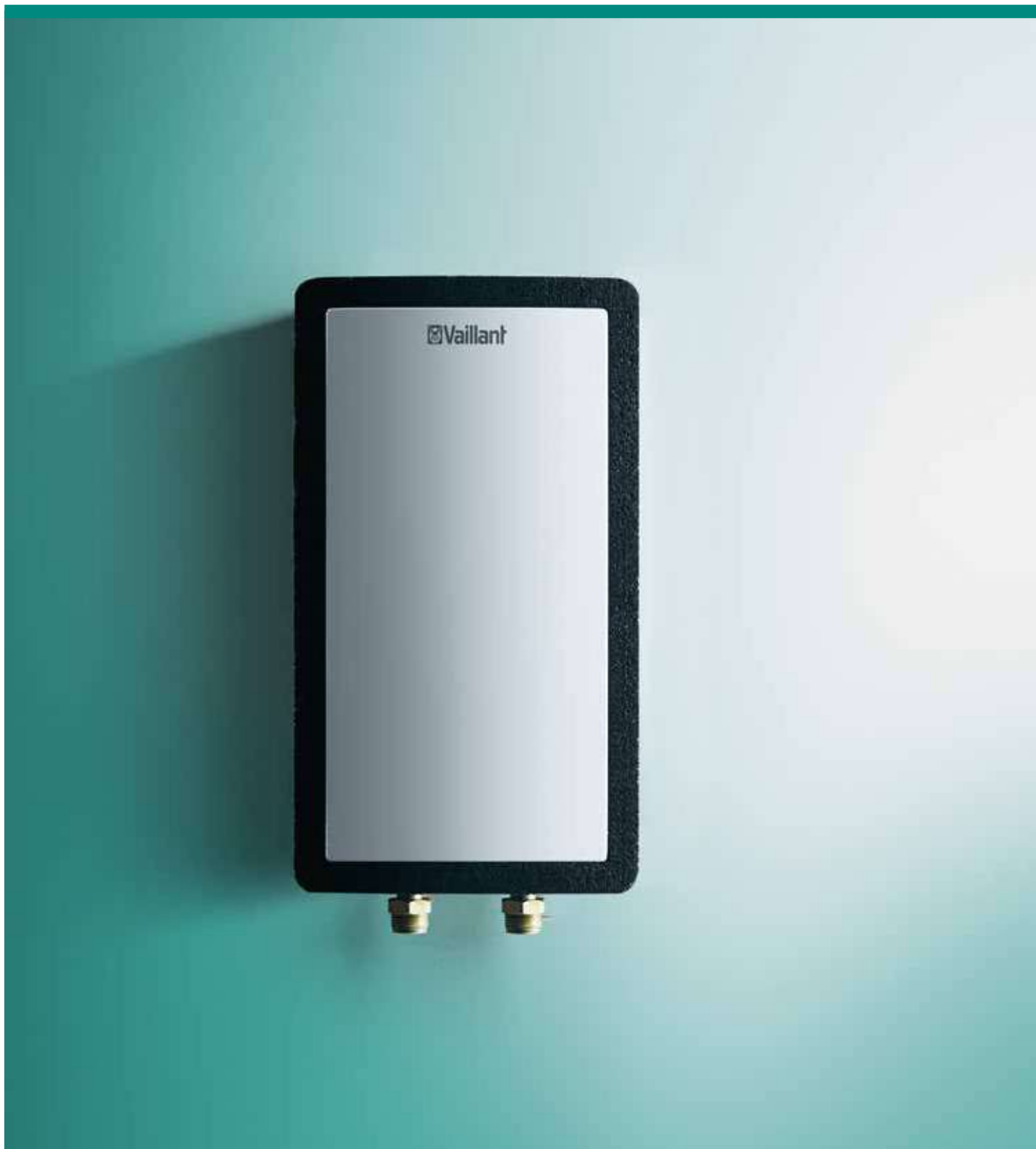


Clearances



NOTE: All measurements are millimetres. Clearance necessary for the installation or maintenance of the appliance

Technical Data	Unit	Heat exchanger module VWZ MWT 150
Article number		0020222285
Product dimensions, width	mm	360
Product dimensions, height	mm	500
Product dimensions, depth	mm	250
Net weight	kg	12
Maximum admissible water pressure	bar	3.0
Minimum admissible water pressure	bar	0.05
Heating and glycol circuit connections	BSP	1"
Supply voltage / frequency	V / Hz	230 / 50
Maximum electrical consumption (pump)	W	45
IP rating		IP X4



This back-up heater is an inline immersion heater developed to give the system an extra boost when required, to ensure comfort levels are maintained in severe weather conditions such as extended cold snaps.



The back-up heater comes with a temperature sensor and sensor pocket to ensure that it only comes on when required and to limit its usage time as much as possible.

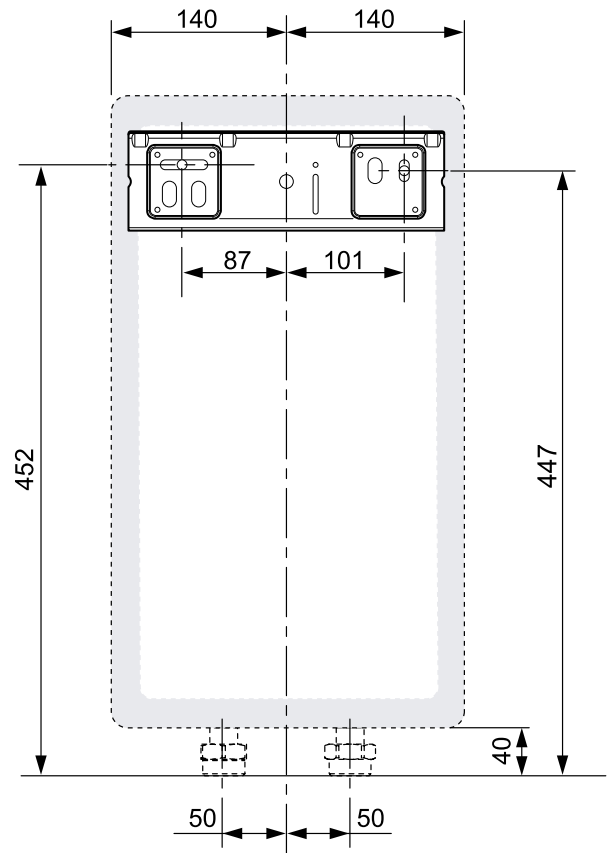
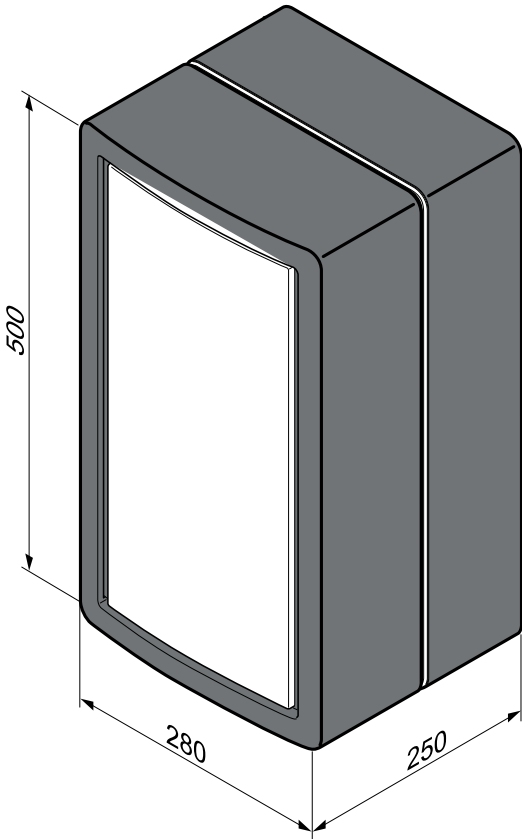
Key features and benefits

- **Provides a back-up boost to the heating system**
Ensures comfort levels are maintained during extreme weather conditions
- **Wall-mounted, compact and lightweight**
500mm (H) x 250mm (D) x 280mm (W) for easy and flexible installation
- **Flexible outputs**
Can be wired to give 2kW, 4kW, 6kW or staged output

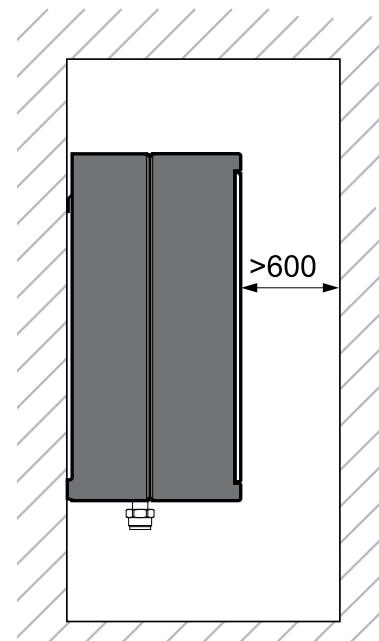
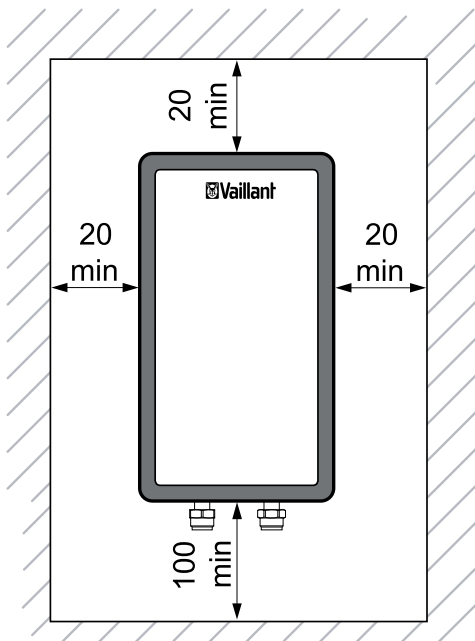
Key

1. Air bleed vent
2. Heating element
3. Heat pump input 1"
4. Installation output 1"
5. Electrical box

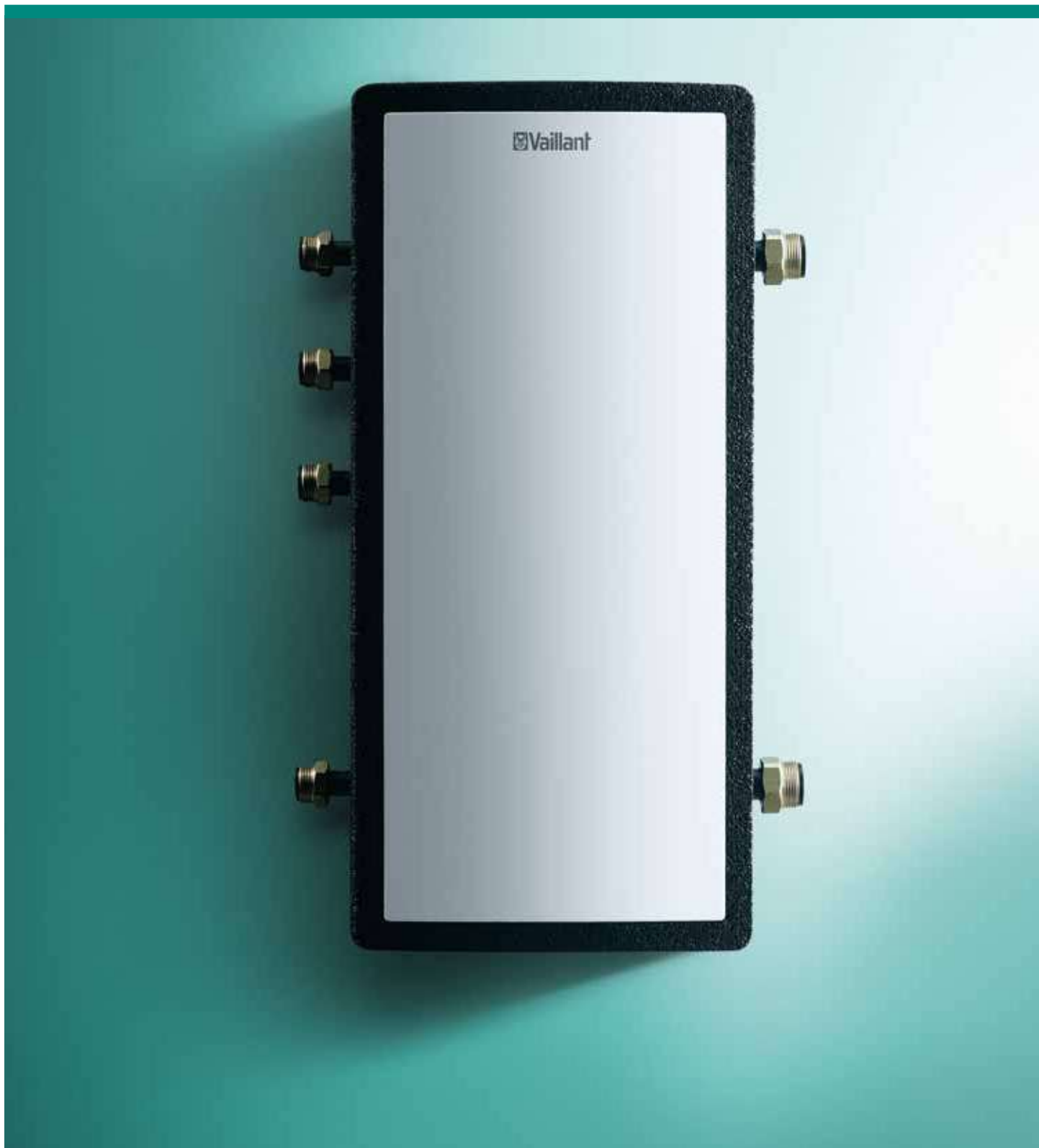
Dimensions



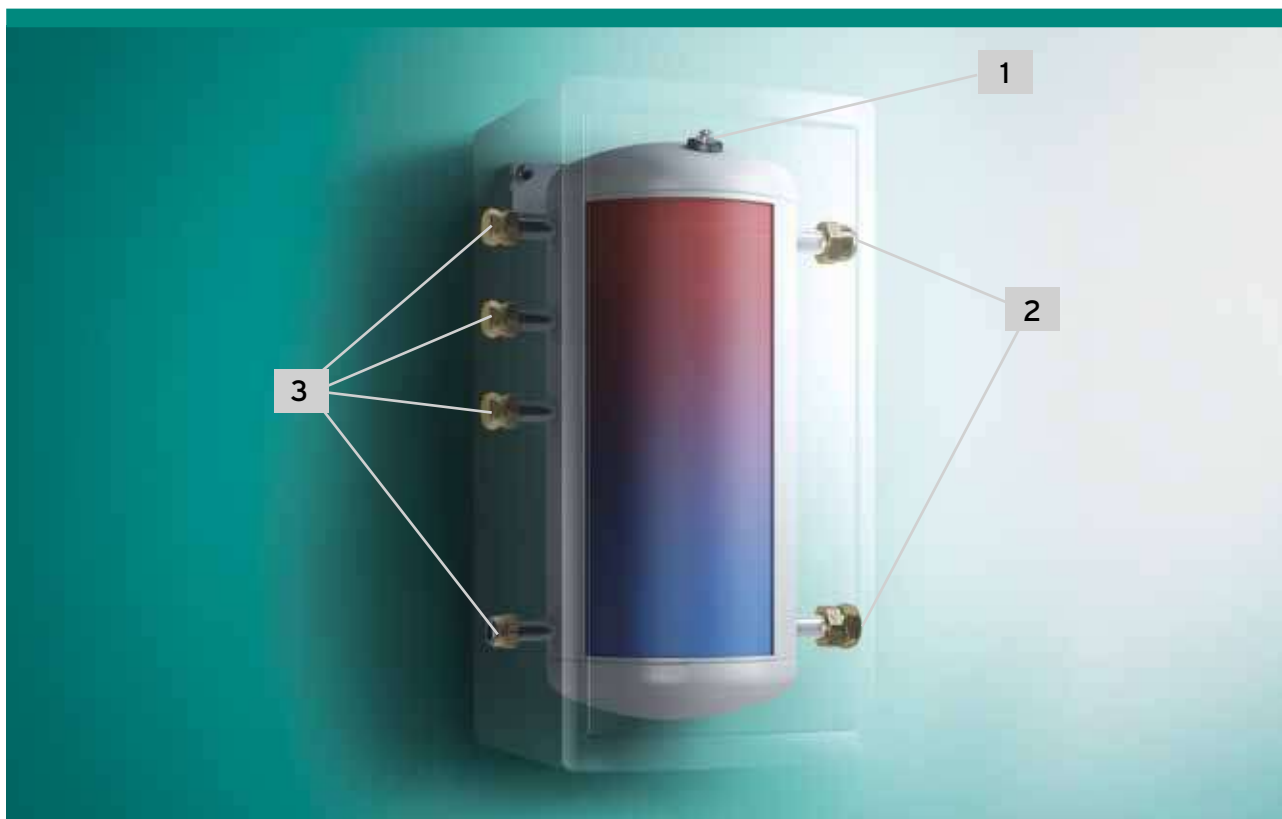
Clearances



Technical Data	Unit	Inline 6kW back-up heater
Article number		0020222286
Product dimensions, width	mm	280
Product dimensions, height	mm	500
Product dimensions, depth	mm	250
Net weight	kg	4
Central heating maximum hydraulic pressure (PSH maximum)	bar	3.0
Central heating minimum hydraulic pressure (PSH minimum)	bar	0.5
Connections	BSP	1"
Supply voltage / frequency	V / Hz	230 / 50
Maximum electrical consumption (pump)	W	6
Maximum current	A	30
IP rating		IP 20
Cable size		3 G4



The wall-mounted 40 litre decoupler module gives added system flexibility to the aroTHERM range as it can act as both a hydraulic nil point in the system and a low-loss header, ensuring system flow through the heat pump and the system.



Should the system have multiple zones and/or require an additional pump to support the complete heating system, the decoupler module provides an excellent solution and is easy to site and install. The tank comes complete with an NTC sensor and pocket at the top of the tank as well as an air bleed valve/vent to help remove air from the system.

The four inlets can be used to link two heating sources and heat pumps into one heating set-up to create a hybrid system. In these cases, the decoupler module acts as a mixing module in which the heat pump acts as the primary heat source with the boiler acting as a boost or taking over once the boiler becomes less cost-effective and/or efficient than the heat pump.

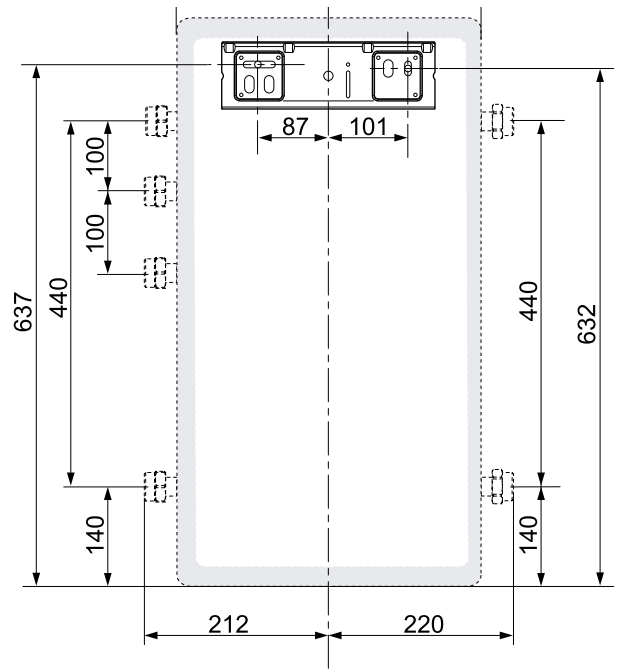
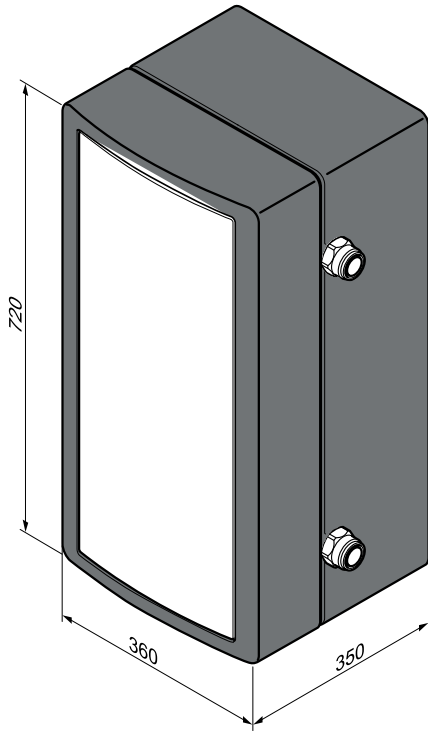
Key features and benefits

- **Helps maintain heat pump and back-up appliance differentials**
Better efficiency and performance
- **Four inlets**
Allows more system volume to be added to meet the requirements of the heat pump or to link two heat sources together in one heating circuit for a hybrid system
- **Multiple tappings**
Flexible system design
- **Thermally layered**
Increased performance
- **Wall-mounted and compact**
720mm (H) x 350mm (D) x 360mm (W) for easy and flexible installation

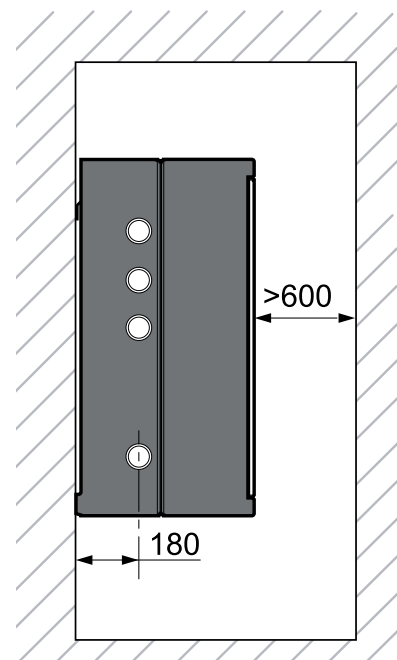
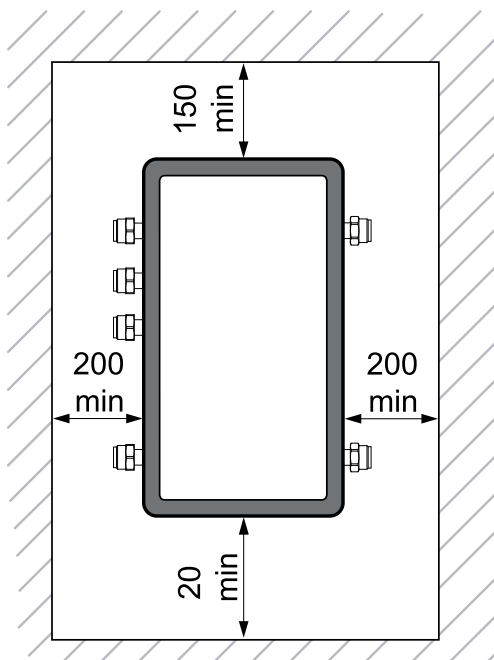
Key

1. Air bleed vent
2. 1 1/4" connection
3. 1" connection

Dimensions



Clearances



NOTE: All measurements are millimetres. Clearance necessary for the installation or maintenance of the appliance

Technical Data	Unit	Decoupler module VWZ MPS 40
Article number		0020222287
Product dimensions, width	mm	360
Product dimensions, height	mm	720
Product dimensions, depth	mm	350
Net weight	kg	18
Nominal capacity of tank	l	40
Maximum admissible water pressure	bar	3.0
Minimum admissible water pressure	bar	0.5
Left hand side connections	BSP	1"
Right hand side connections	BSP	1 ¼"



The uniSTOR heat pump cylinder range has been developed to work in harmony with Vaillant aroTHERM heat pumps, to provide highly efficient heating and hot water systems.

uniSTOR's large surface area and smooth coil design maximises heat transfer, to ensure connected Vaillant heat pumps run at their optimum efficiency, to reduce running costs and increase hot water performance.

Ranging from 150 up to 800 litres, our uniSTOR heat pump cylinders are available in both pre-plumbed (150 to 300 litres only) and standard options, giving you and your customers even more flexibility. In addition to this, the 250 and 300 litre cylinders have an increased coil size making them compatible with a wider range of heat pump systems.

uniSTOR cylinders also have a Global Warming Potential of less than 5, thanks to thermal injected insulation, as well as a 100% recyclable stainless steel tank with an ultra-hard-wearing outer shell, to deliver a highly efficient and sustainable heating system.

Key features and benefits

- **Thermal injected polyurethane insulation combined with vacuum panels**
Superior insulation and efficiency
- **Large diameter, smooth bore coil technology**
Provides quiet operation, reduces build-up of scale and aids in long-term efficiency through automatic descaling
- **Global Warming Potential less than 5 and ozone depletion of 0**
Designed around environmental requirements
- **Factory fitted immersion heater (150 to 300 litre uniSTOR cylinders)**
Emergency back-up in case of main heat source failure
- **Thermodynamically positioned sensor pocket**
Optimises system performance
- **Expansion vessels included or available as accessories**
Complete system solution offering whilst meeting all building regulations

Compatibility matrix

aroTHERM	uniSTOR 150 litre cylinder	uniSTOR 200 litre cylinder	uniSTOR 250 litre cylinder	uniSTOR 300 litre cylinder	uniSTOR 500 litre cylinder	auroSTOR 500 litre cylinder*	uniSTOR 800 litre cylinder
5kW	✓	✓					
8kW	✓	✓	✓	✓			
11kW	✓	✓	✓	✓	✓	✓	
15kW		✓	✓	✓	✓	✓	✓

uniSTOR cylinders

Description	Article number
150 litre pre-plumbed slimline uniSTOR	0020237129
200 litre pre-plumbed uniSTOR	0020237130
250 litre pre-plumbed uniSTOR	0020237131
300 litre pre-plumbed uniSTOR	0020237132
150 litre standard uniSTOR	0020235271
200 litre standard uniSTOR	0020235272
250 litre standard uniSTOR	0020235273
300 litre standard uniSTOR	0020235274
500 litre large capacity uniSTOR	0010019228
800 litre large capacity uniSTOR	0010019229
500 litre large capacity auroSTOR*	0010019234

* auroSTOR 500 litre cylinder for combined heat pump and solar thermal systems.

Accessories (500 and 800 litre cylinders only)	Article number
Immersion heater 7kW (800 litre only)	0020235671
Unvented cylinder kit 1"	0020235964
Unvented cylinder kit 1¼"	0020235965
Unvented cylinder kit 1½"	0020235966
Unvented cylinder kit 2"	0020235967
Expansion vessel 50 litre (for uniSTOR and auroSTOR 500 litre)	0020229941
Expansion vessel 80 litre (for uniSTOR 800 litre)	0020229942

NOTE: One unvented kit and expansion vessel required with each 500 and 800 litre cylinder

For further details on heat pump cylinders please see the Heat Pump Cylinder Brochure.



The Vaillant wired VRC 700 and wireless VRC 700f system controls allow your customer to take control of their Vaillant heating and hot water system.

Designed to work harmoniously with all current Vaillant products, the VRC 700 and VRC 700f effortlessly use weather compensation technology to ensure your customers appliances are working to their peak performance and always maintaining optimum efficiency.

Key features and benefits

- **Designed with simplicity and familiarity in mind**
The VRC 700 and VRC 700f controls are designed with ease of use in mind. Using a familiar menu structure, it makes controlling the system easy and efficient
- **Takes care of all Vaillant equipment automatically**
Intelligently communicates with all Vaillant appliances. The hybrid management system will also automatically choose the most efficient appliance, to deliver the most cost effective and energy efficient solution
- **Flexible time programs**
Three heating and three hot water time periods can be set for each week, day or over a 24 hour period
- **Holiday function**
Prevents the heating and hot water coming on whilst away and reinstates it upon return
- **Programs stored in memory permanently**
Holds time and temperature programs permanently, even in the event of a power failure
- **Up to three heating circuits with domestic hot water control**
Additional heating zone controls are available in wired (VR 91) and wireless (VR 91f) options and are designed to mirror the functionality of the VRC 700 and VRC 700f. This is to provide your customers with a familiar user experience anywhere in their property
- **Clear, high contrast backlit display**
Blue backlit display, offers outstanding contrast, resulting in clear information, with low energy consumption on both the VRC 700 / VRC 700f and VR 91 / VR 91f
- **Controls multiple heat pumps**
Control up to seven heat pumps with a single boiler in cascade whilst also supporting solar thermal
- **Cascade functionality utilises degree minutes in order to calculate when best to use each appliance in turn**
It simultaneously records the individual running hours to ensure every appliance is run for an equal amount of time

Pack enables control of the aroTHERM heat pump system, one wired/wireless heating zone and hot water system



Pack includes:
VRC 700(f)

Wired pack:
0020236291

Wireless pack:
0020259829



Pack enables control of the aroTHERM heat pump system, one wired/wireless heating zone using Vaillant controls and one heating zone using third party controls, hot water and heat exchanger module



Pack includes:
VRC 700(f)
and VR 70

Wired pack:
0020236292

Wireless pack:
0020259830



Pack enables control of the aroTHERM heat pump system, two wired/wireless heating zones and hot water system



Pack includes:
VRC 700(f), VR
70 and VR 91(f)

Wired pack:
0020236293

Wireless pack:
0020259831



Pack enables control of the aroTHERM heat pump system, three wired/wireless heating zones and hot water system



Pack includes:
VRC 700(f),
VR 71 and two
VR 91(f)

Wired pack:
0020236294

Wireless pack:
0020259832



Pack enables control of the aroTHERM heat pump system, one wired/wireless heating zone and solar thermal hot water system



Pack includes:
Wired VRC 700(f),
VR 70 and VR 11

Wired pack:
0020236295

Wireless pack:
0020259833



Pack enables control of the aroTHERM heat pump system, two wired/wireless heating zones and solar thermal hot water system



Pack includes:
VRC 700(f), VR 71
VR 11 and VR 91(f)

Wired pack:
0020259834

Wireless pack:
0020259835



VRC 700 and VRC 700f controls and components

Description	Article number
VRC 700 wired, weather compensating, programmable room thermostat	0020236291
VRC 700f wireless, weather compensating, programmable room thermostat	0020259829
VR 91 wired, programmable, room thermostat	0020171334
VR 91f wireless, programmable, room thermostat	0020231566
VR 70 wiring centre	0020184844
VR 71 wiring centre	0020184847
VR 32 eBUS coupler	0020139895
VR 40 two-in-seven multifunctional module	0020017744

Performance data

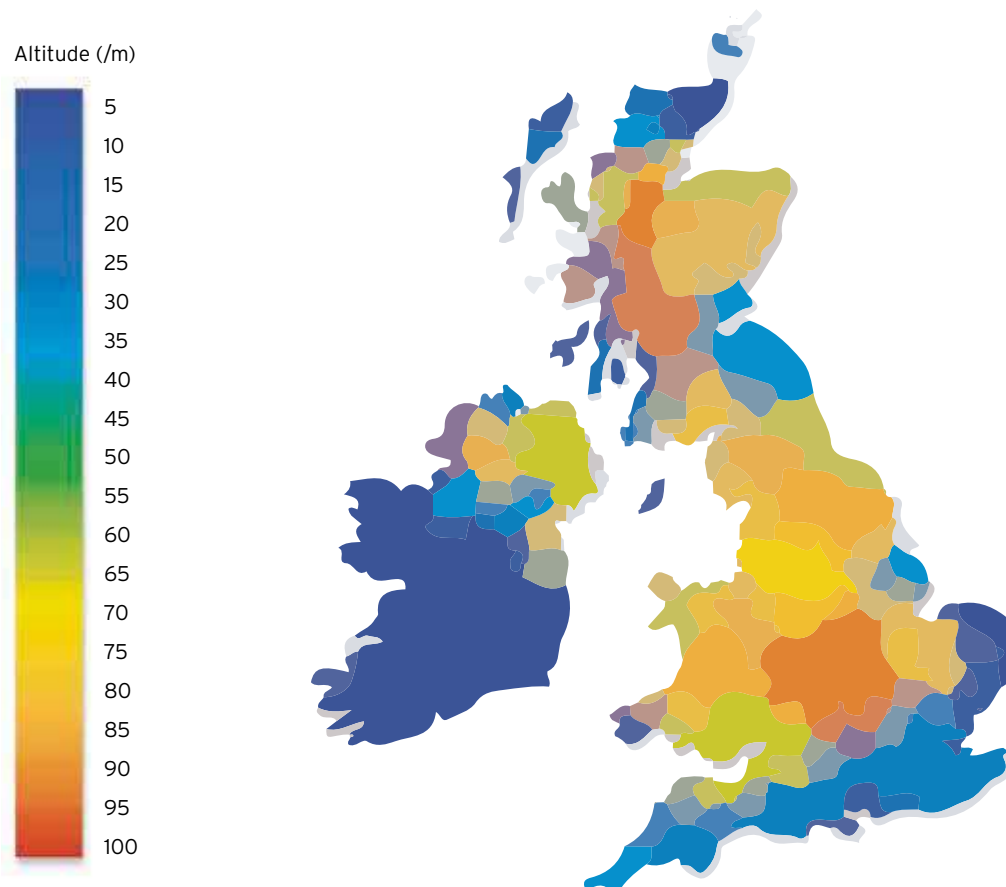
When designing a heating system that utilises a heat pump, there are a number of design factors that need to be considered.

Heat loss

MCS recommend using the MIS 3005 installation standard for designing a heat pump system. Systems should be specified at peak winter requirements, depending on location, to ensure year round comfort as detailed in the table below.

Location	Altitude (/m)	Hourly dry-bulb temperature (/°C) equal to or exceeded for 99% of the hours in a year
Belfast	68	-1.2
Birmingham	96	-3.4
Cardiff	67	-1.6
Edinburgh	35	-3.4
Glasgow	5	-3.9
London	25	-1.8
Manchester	75	-2.2
Plymouth	27	-0.2

A room-by-room heating requirement check will then need to be carried out at the set outside temperature in order to understand the heating needs of the total property.



Seasonal Coefficient of Performance

As the outside air temperature drops, the amount of energy the heat pump can extract decreases, meaning the heating output will decrease to ensure end user comfort at peak heating times.

aroTHERM output and SCoP table									
		35°C flow		40°C flow		45°C flow		50°C flow	
		output (kW)	SCoP	output (kW)	SCoP	output (kW)	SCoP	output (kW)	SCoP
5kW	-5°C	5.26	4.07	5.33	3.66	5.39	3.26	4.94	3.15
	-3°C	5.66		5.97		6.28		5.68	
	0°C	6.12		6.40		6.68		6.11	
	2°C	6.43		6.71		6.98		6.41	
8kW	-5°C	7.15	4.58	6.46	4.22	5.76	3.86	5.27	3.41
	-3°C	7.70		6.76		5.81		5.27	
	0°C	7.81		7.20		6.58		5.98	
	2°C	8.27		7.74		7.20		6.47	
11kW	-5°C	8.23	3.15	7.70	3.03	7.17	2.91	5.65	2.90
	-3°C	8.42		7.86		7.30		6.00	
	0°C	9.25		8.57		7.88		6.70	
	2°C	9.81		9.02		8.28		7.00	
15kW	-5°C	12.65	3.28	12.07	3.15	11.00	3.01	10.25	3.01
	-3°C	12.90		12.20		11.50		10.65	
	0°C	13.20		12.85		12.40		11.78	
	2°C	14.00		13.55		13.10		12.45	

Seasonal Coefficient of Performance data is calculated as per EN 14825 for aroTHERM 5kW and 8kW. aroTHERM 11kW and 15kW are calculated as per EN 14511.

Planning permission

As air-to-water heat pumps are installed on the outside of the property and produce a certain level of sound (the pumps use a fan to move air which will generate noise), it must be determined if a single heat pump installation meets permitted development rules. The Vaillant MCS 020 tool can help determine sound pressure levels from our full range of air-to-water heat pumps. If the sound pressure level is 42dB(A) or above, planning permission is likely to be required. However, it is worth noting that planning permission for each county within the UK varies and that Scotland has its own rules regarding air-to-water heat pumps, which you will need to refer to.



System design considerations

System sizing

Determine the estimated heat loss from the property, taking into consideration the year of build. The value in table A will determine the approximate amount of kW required from the heat pump and will indicate which aroTHERM is required in table B. aroTHERM and aroTHERM hybrid heat pumps can also be installed in cascade for larger domestic and commercial properties. Contact Vaillant for further details.

Heat loss calculation table A

No house upgrade		Total m ²																		
Year	Unit	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
1970-1995	100W/m ²	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00											
1996-2005	80W/m ²	5.60	6.40	7.20	8.00	8.80	9.60	10.40	11.20	12.00	12.80	13.60	14.40	15.20						
2006-2010	50W/m ²	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00	11.50	12.00	12.50
2010	40W/m ²	2.80	3.20	3.60	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60	8.00	8.40	8.80	9.20	9.60	10.00

House upgrade for double glazing and loft insulation		Total m ²																		
Year	Unit	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
1970-1995	85W/m ²	5.95	6.80	7.65	8.50	9.35	10.20	11.05	11.90	12.75	13.60	14.45	15.30							
1996-2005	70W/m ²	4.90	5.60	6.30	7.00	7.70	8.40	9.10	9.80	10.50	11.20	11.90	12.60	13.30	14.00	14.70	15.40			
2006-2010	50W/m ²	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00	11.50	12.00	12.50
2010	40W/m ²	2.80	3.20	3.60	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60	8.00	8.04	8.80	9.20	9.60	10.00

House upgrade for double glazing, loft insulation and cavity wall insulation

House upgrade for double glazing, loft insulation and cavity wall insulation		Total m ²																		
Year	Unit	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
1970-1995	70W/m ²	4.90	5.60	6.30	7.00	7.00	8.40	9.10	9.80	10.50	11.20	11.90	12.60	13.30	14.00					
1996-2005	60W/m ²	4.20	4.80	5.40	6.00	6.60	7.20	7.80	8.40	9.00	9.60	10.20	10.80	11.40	12.00	12.60	13.20	13.80	14.40	15.00
2006-2010	50W/m ²	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00	11.50	12.00	12.50
2010	40W/m ²	2.80	3.20	3.60	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60	8.00	8.40	8.80	9.20	9.60	10.00

Auxiliary heater required for peak heating requirements (-3°C and below)

aroTHERM calculation table B

Based on 35°C flow temperature and -3°C outside air temperature

0 - 6kW	aroTHERM 5kW
4.5kW - 7.7kW	aroTHERM 8kW
6.5kW - 8.4kW	aroTHERM 11kW
8kW - 12.9kW	aroTHERM 15kW
11kW and above	hybrid systems

This estimating tool is to be used as a guide only and does not replace a full heat loss calculation for a property. Vaillant will not accept responsibility for the mis-sizing of a heating system. Please contact your local sales representative for more details.



750mm flexi hose

- Pre-insulated with 20mm weatherproof high-grade insulation to improve system efficiency and cut installation time
- Right angled fixing to the heat pump to minimise rear clearance
- 28mm copper compression fitting for a fast and easy installation
- 'Kink-free' bending designed to minimise the possibility of 'kinking' in the hose
- 750mm length to suit most site requirements

Description	Article number
750mm flexi hose	0020165288



Raised rubber feet

- Available in 600mm length therefore meeting all site requirements
- Raised rubber mounting that offers excellent vibration absorption to minimise noise
- Extra clearance at the base, which improves access to the condensation pipe and drainage
- Improves air flow

Description	Article number
Raised rubber feet	0020175140



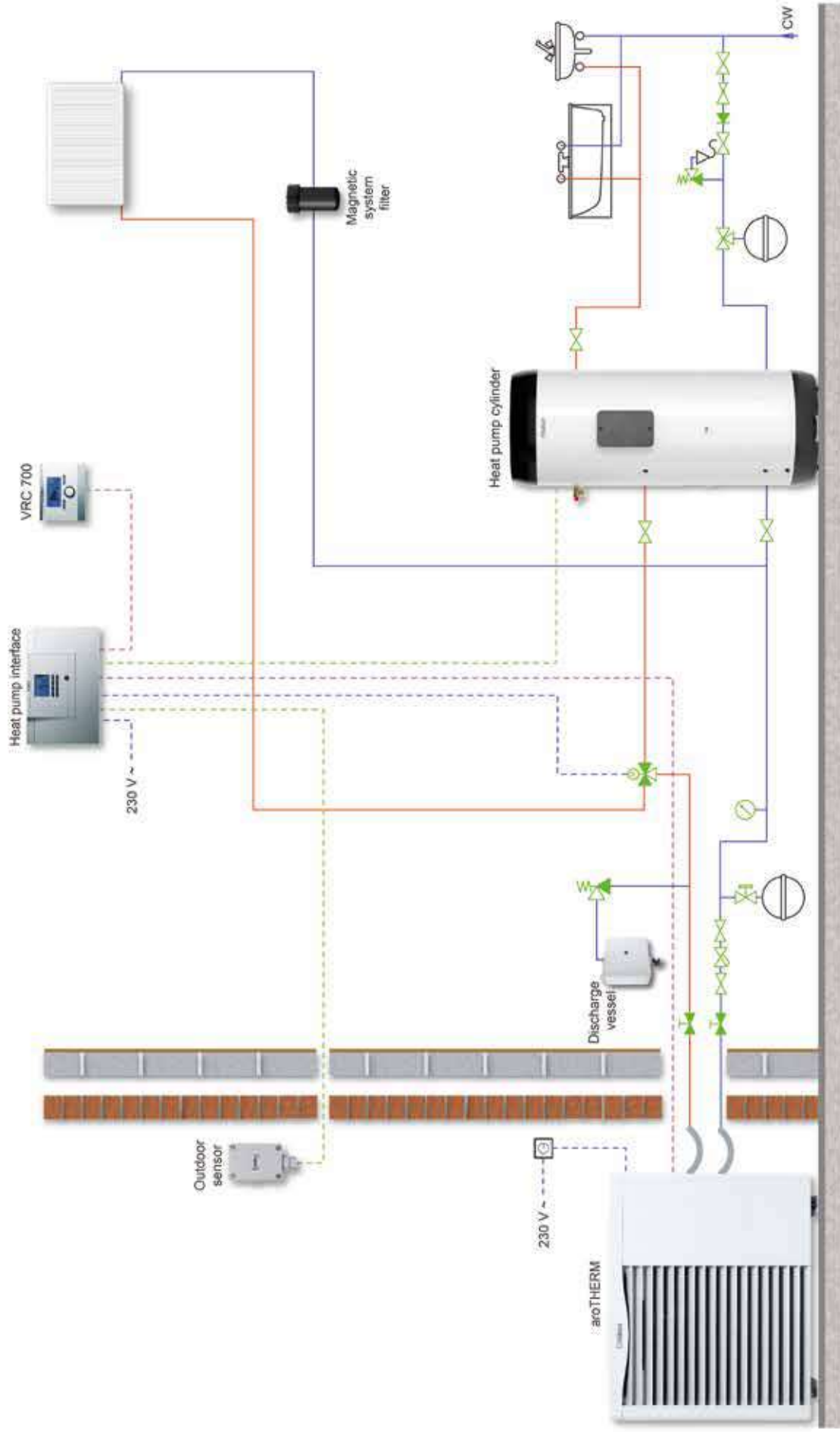
Discharge vessel

- Small wall-mounted vessel
- Collects heating system glycol if the PRV opens
- Ensures glycol does not discharge into the drainage system

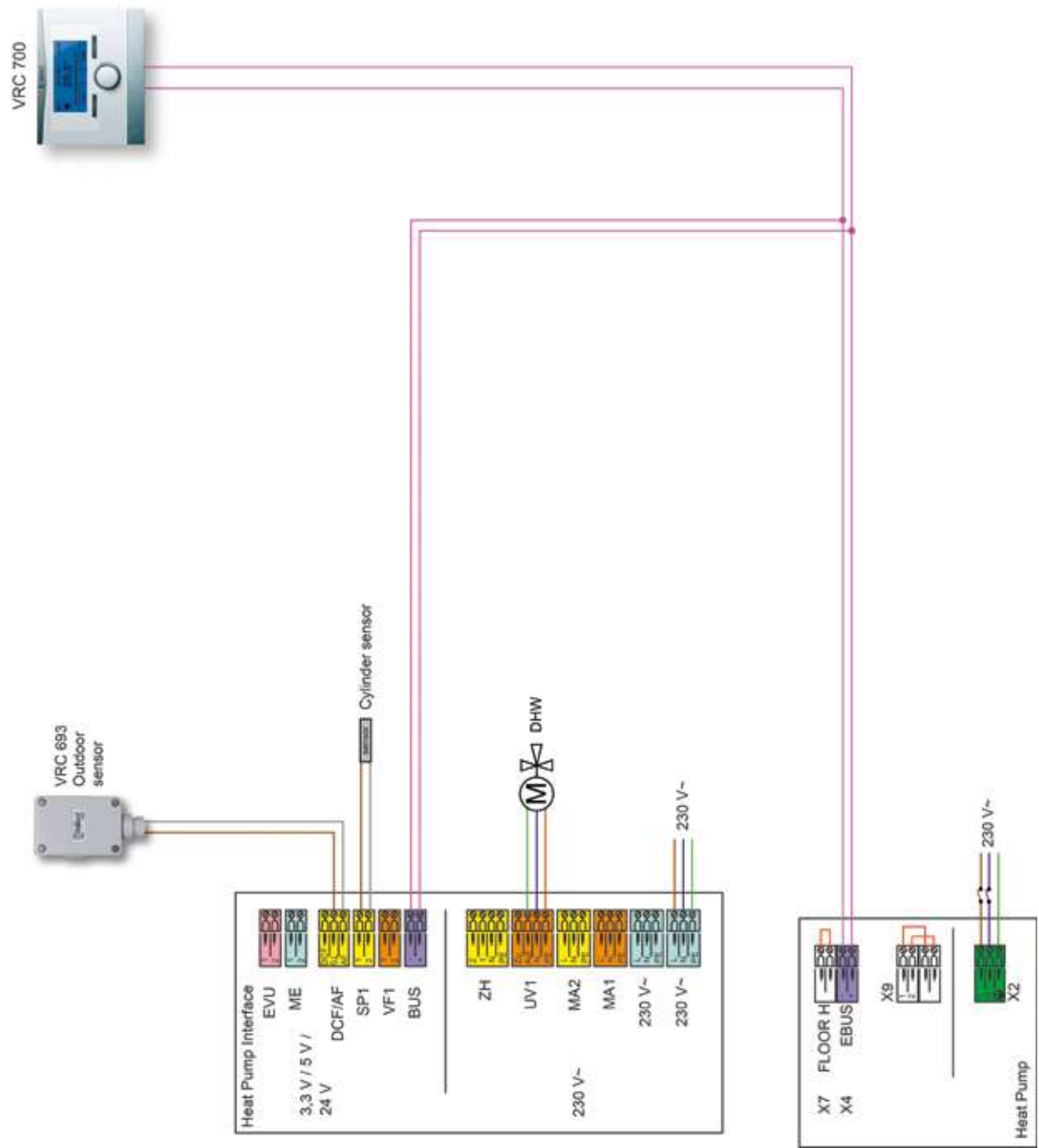
Description	Article number
Discharge vessel	0020145563

Heat pump, DHW tank, single zone - schematic

On first commissioning please select system No. 8 for VRC 700 / VRC 700f

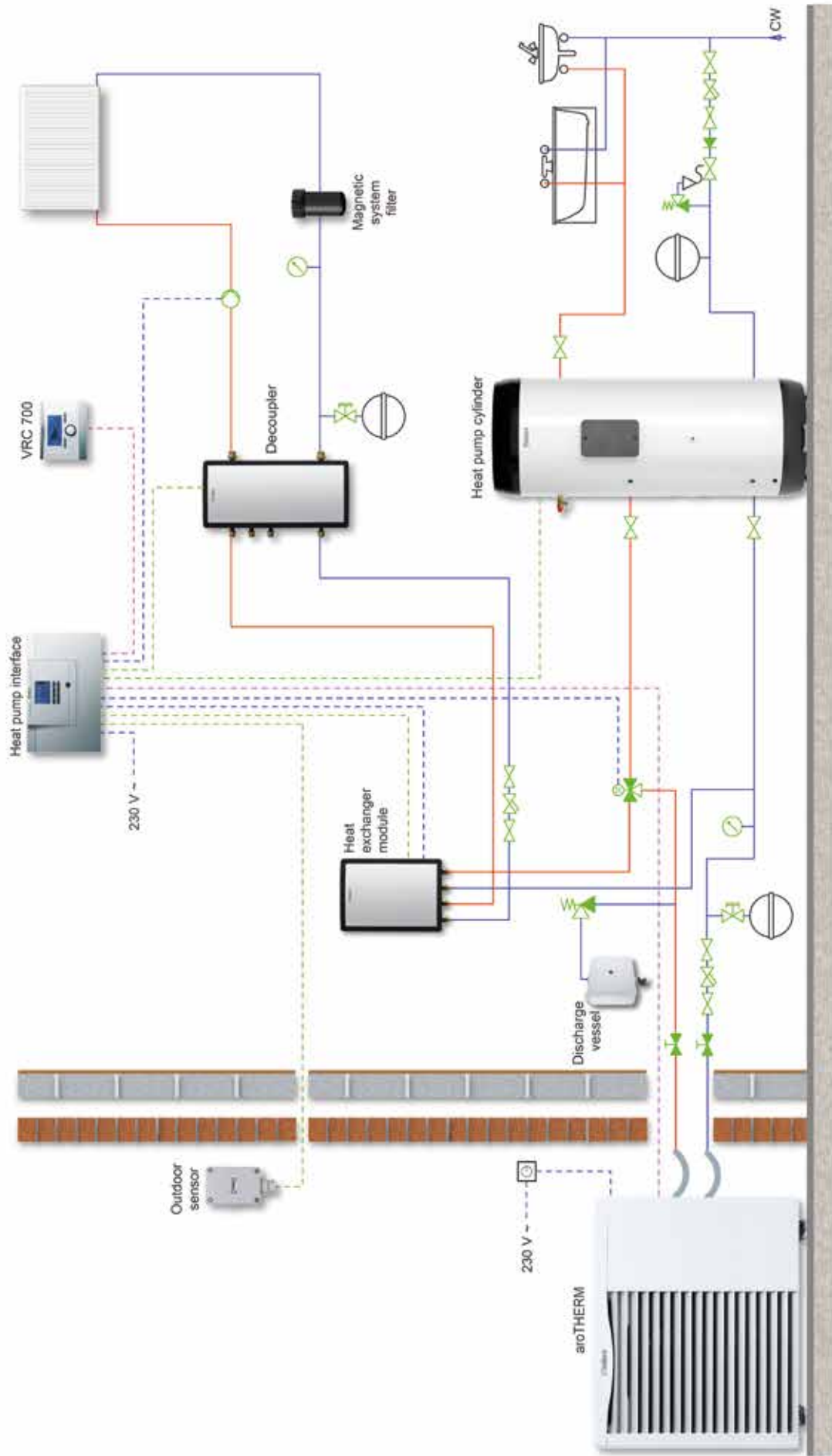


Heat pump, DHW tank, single zone - wiring

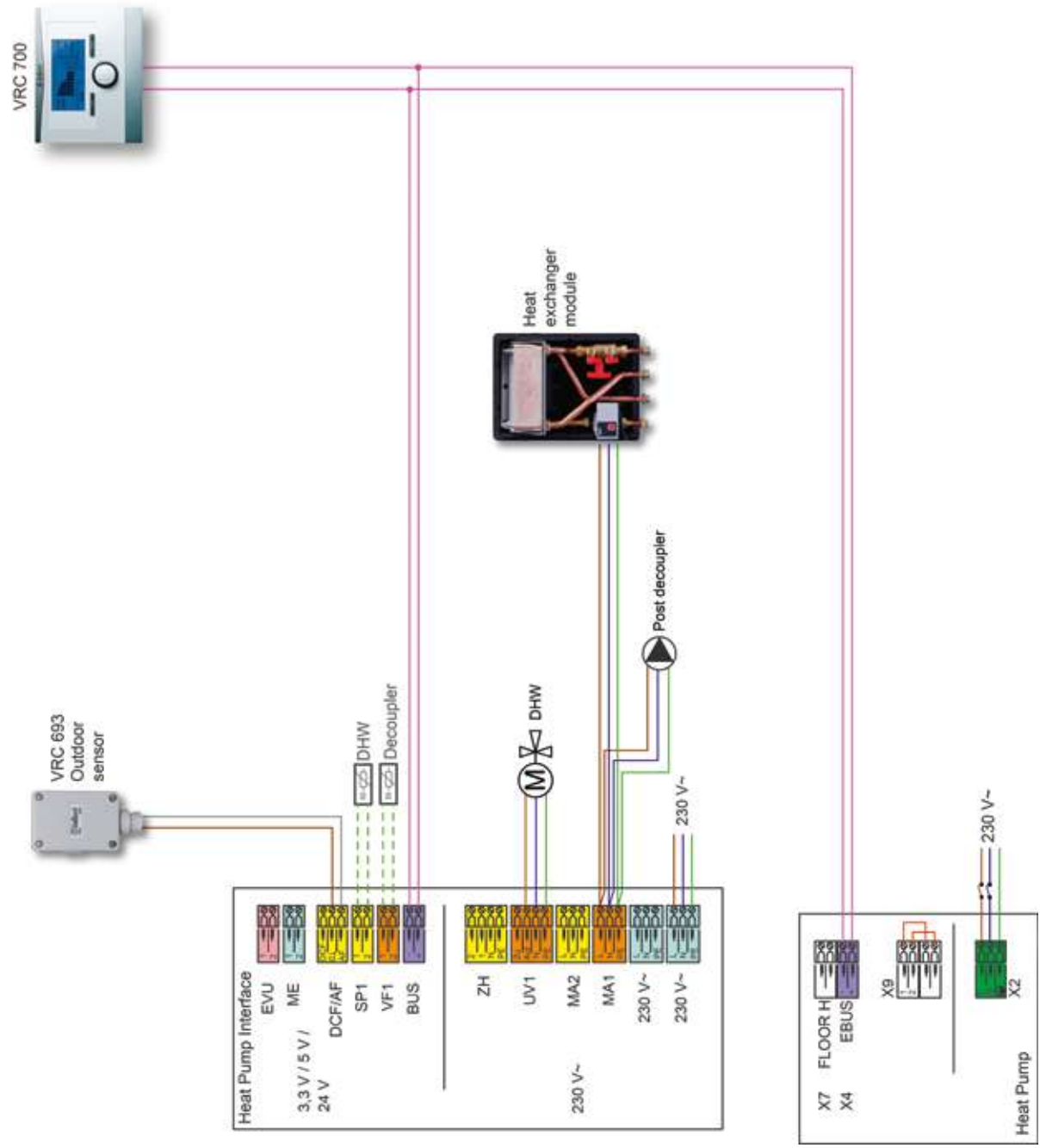


Heat pump, heat exchanger module, decoupler, DHW tank, single zone - schematic

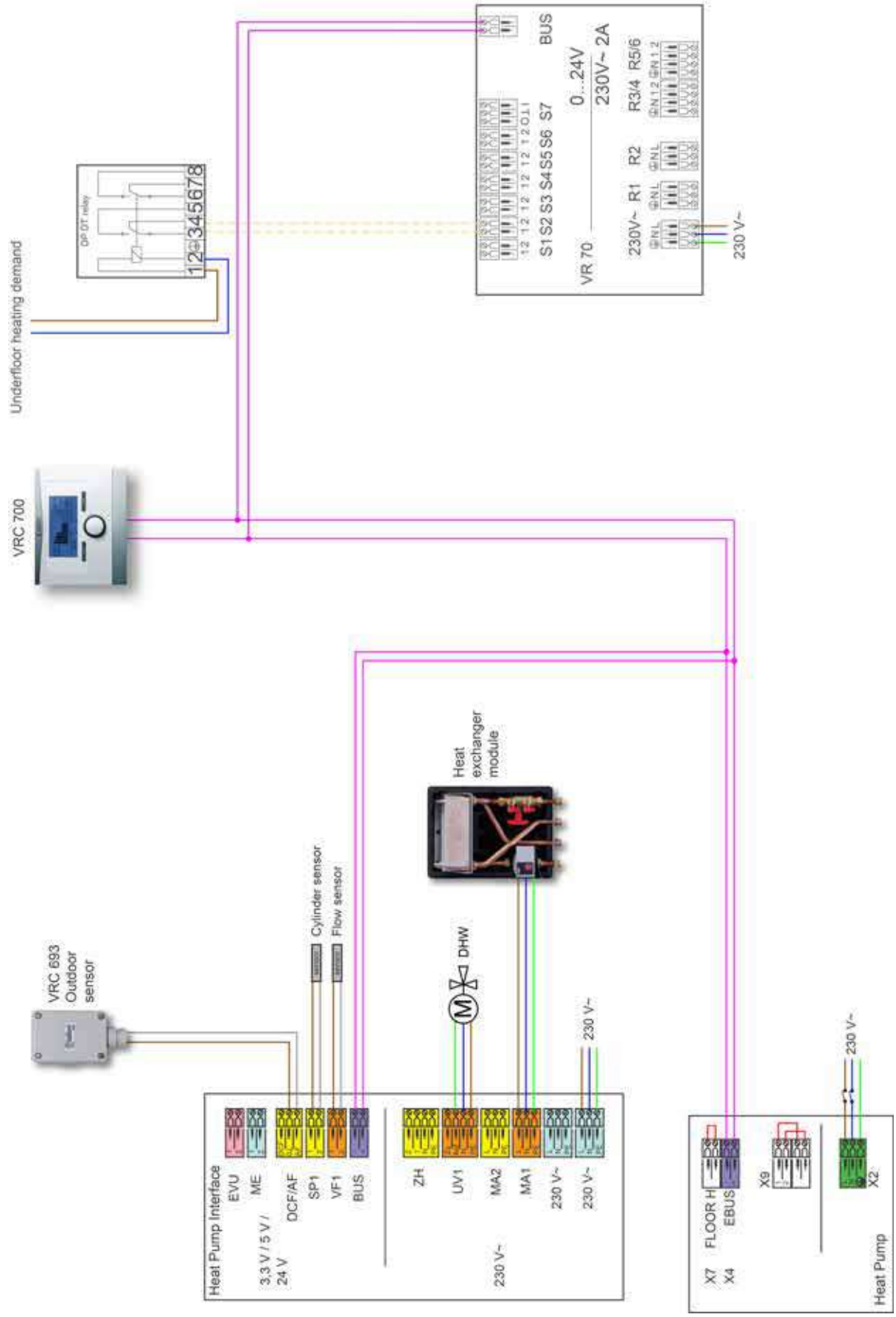
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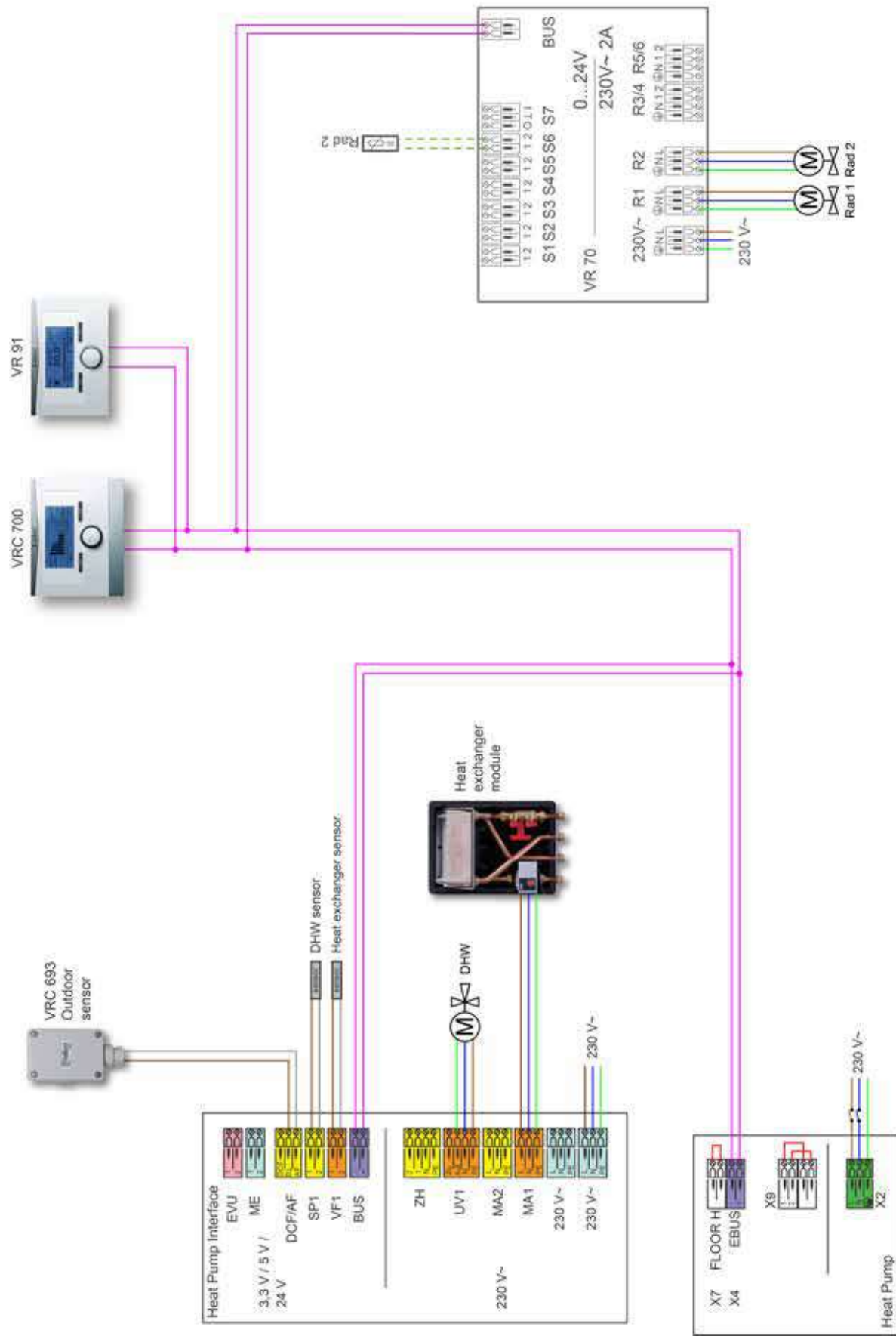
Heat pump, heat exchanger module, decoupler, DHW tank, single zone - wiring



Heat pump, heat exchanger module, DHW tank, underfloor heating - wiring

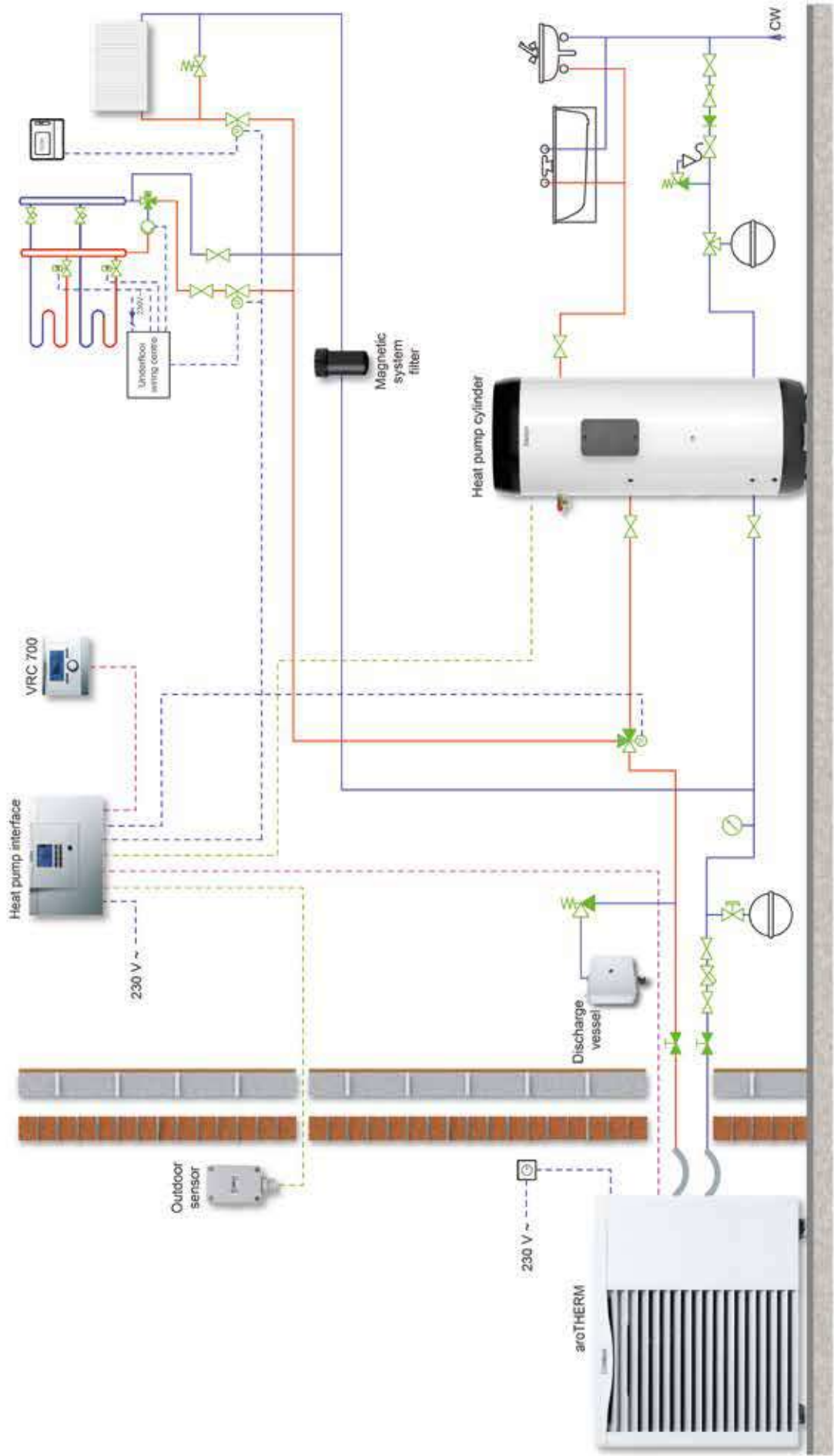


Heat pump, heat exchanger module, DHW tank, two zone - wiring

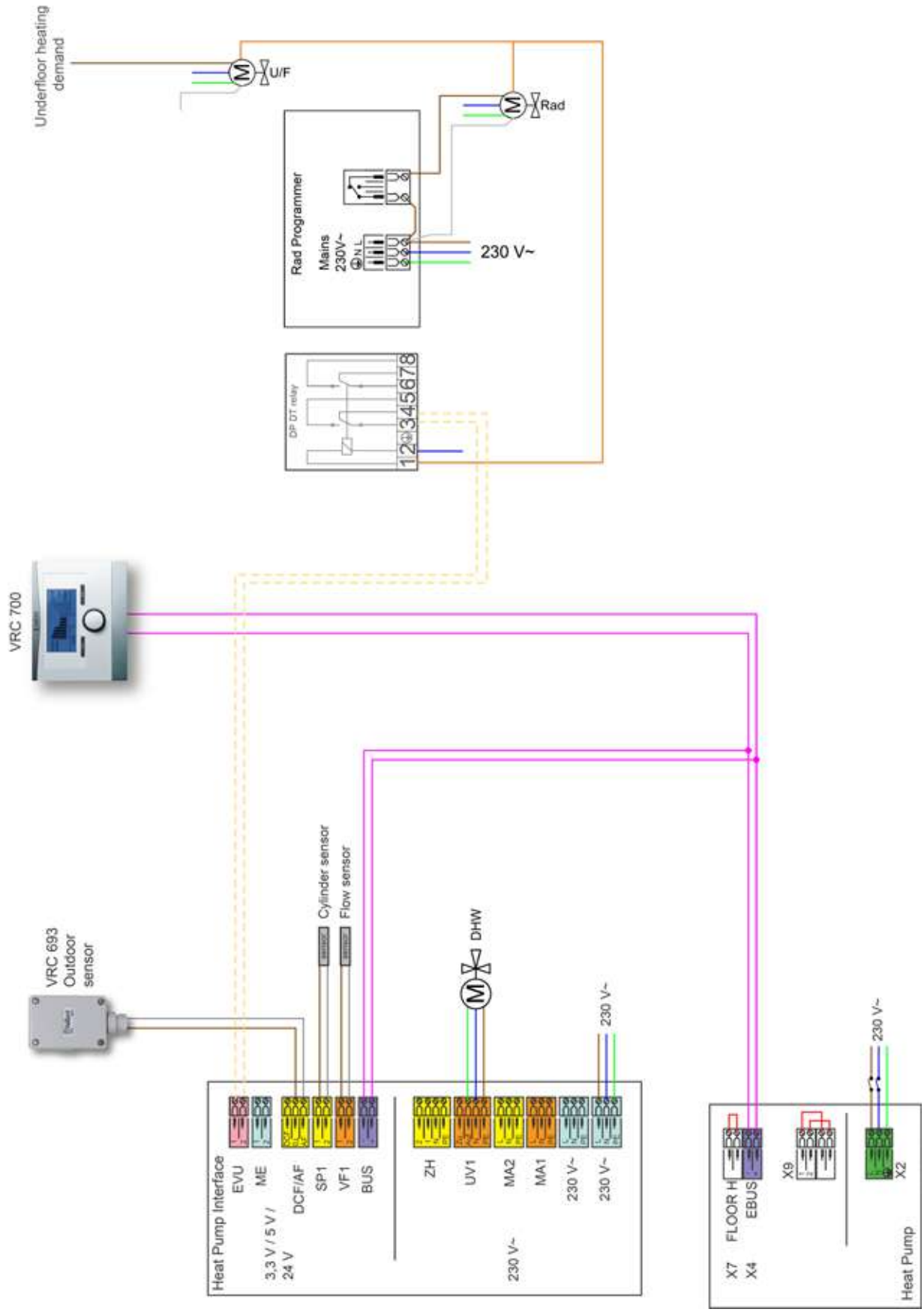


Heat pump, DHW tank, underfloor heating, one rad zone - schematic

On first commissioning please select system No. 10 for VRC 700 / VRC 700f

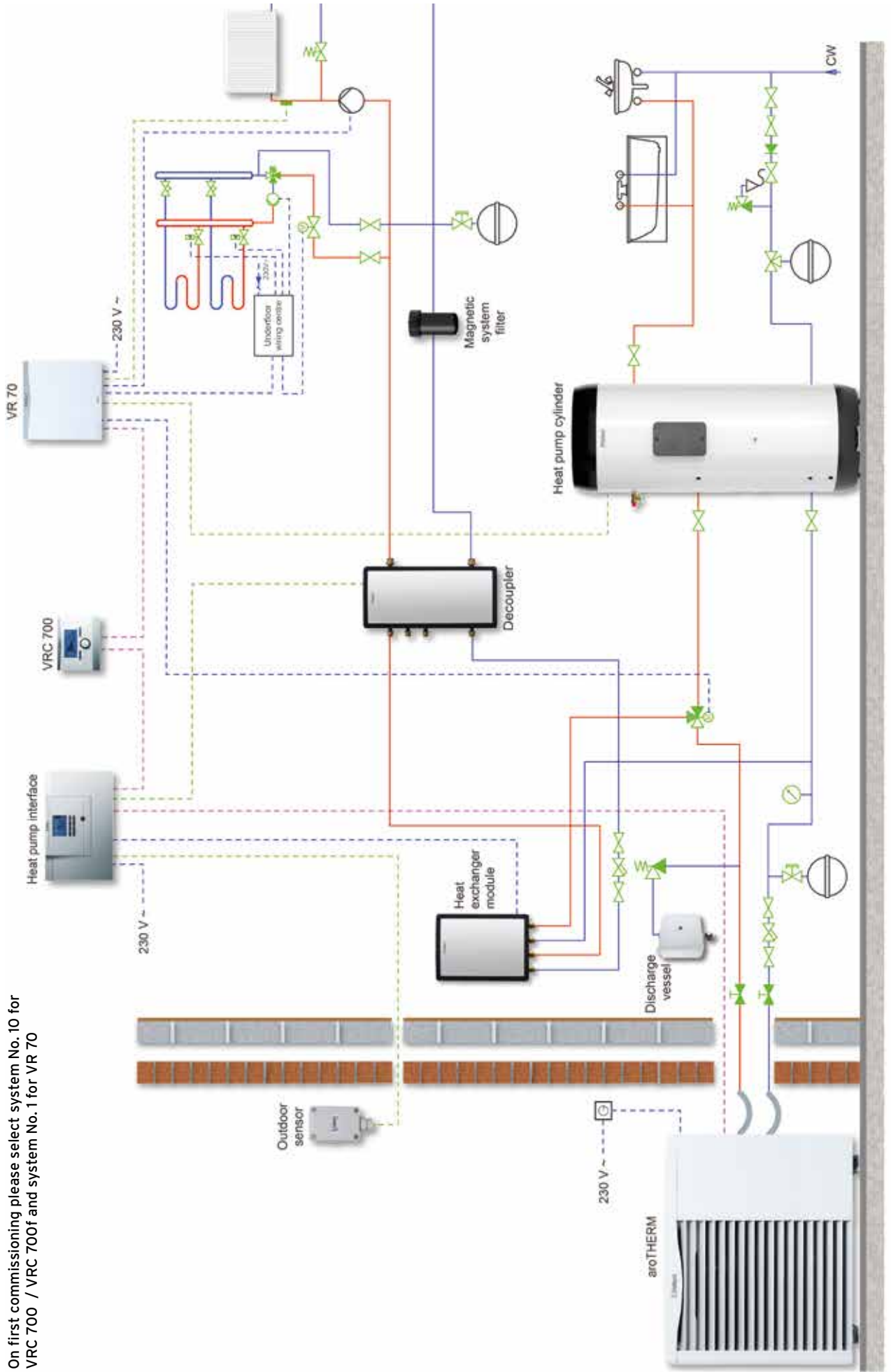


Heat pump, DHW tank, underfloor heating, one rad zone - wiring

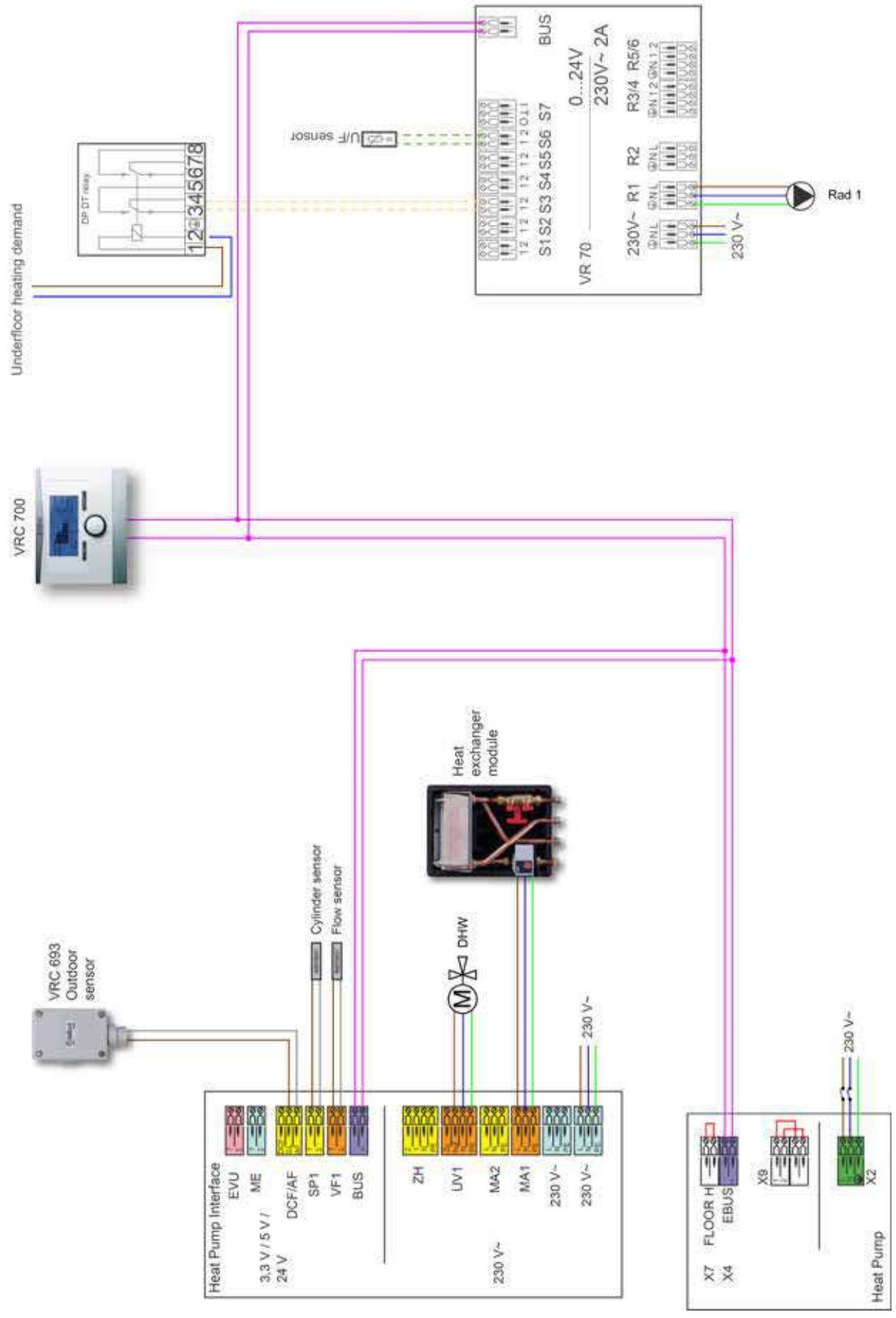


Heat pump, heat exchanger module, decoupler, DHW tank, U/F, one zone - schematic

On first commissioning please select system No. 10 for VRC 700 / VRC 700f and system No. 1 for VR 70

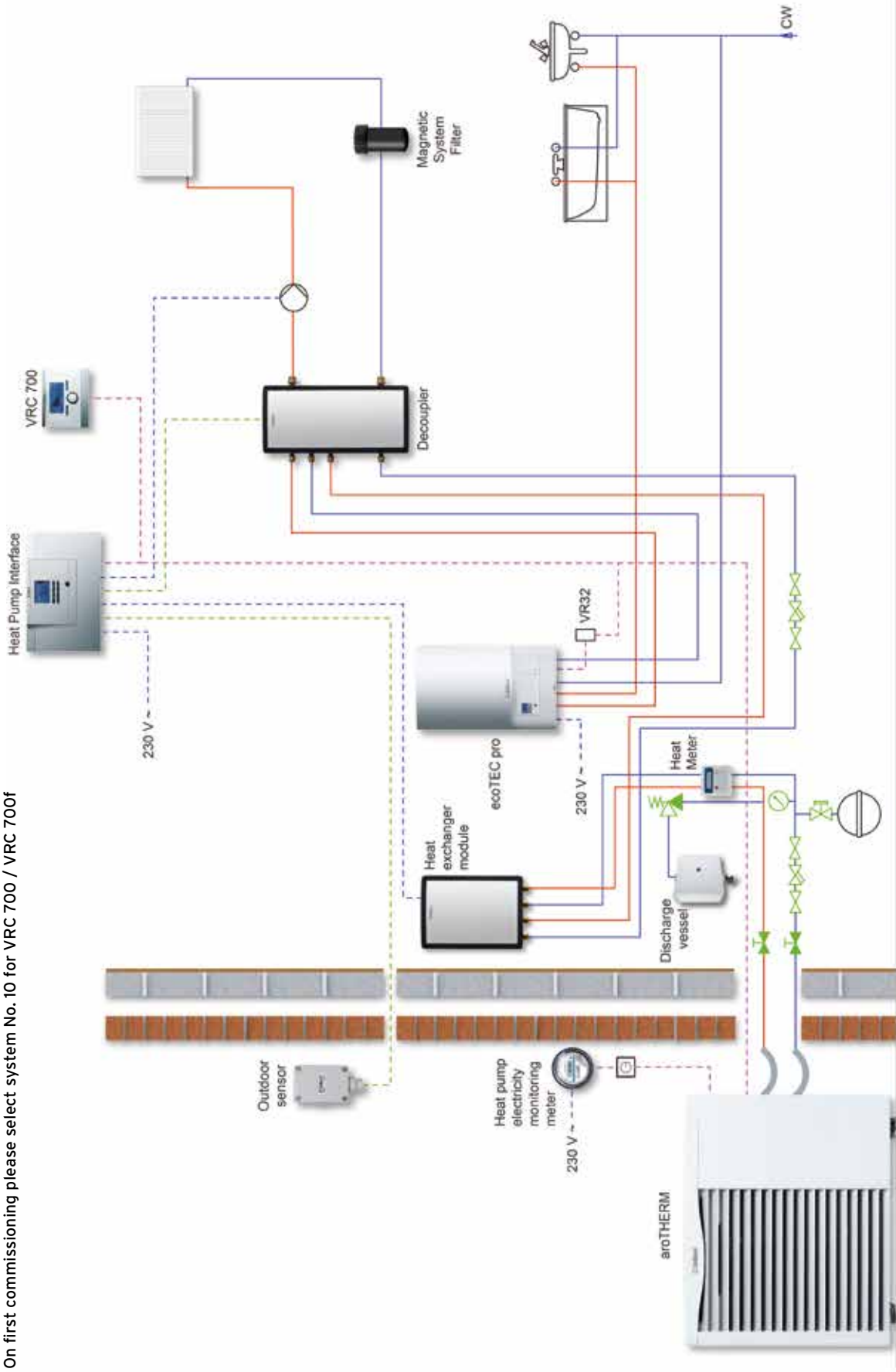


Heat pump, heat exchanger module, decoupler, DHW tank, U/F, one zone - wiring



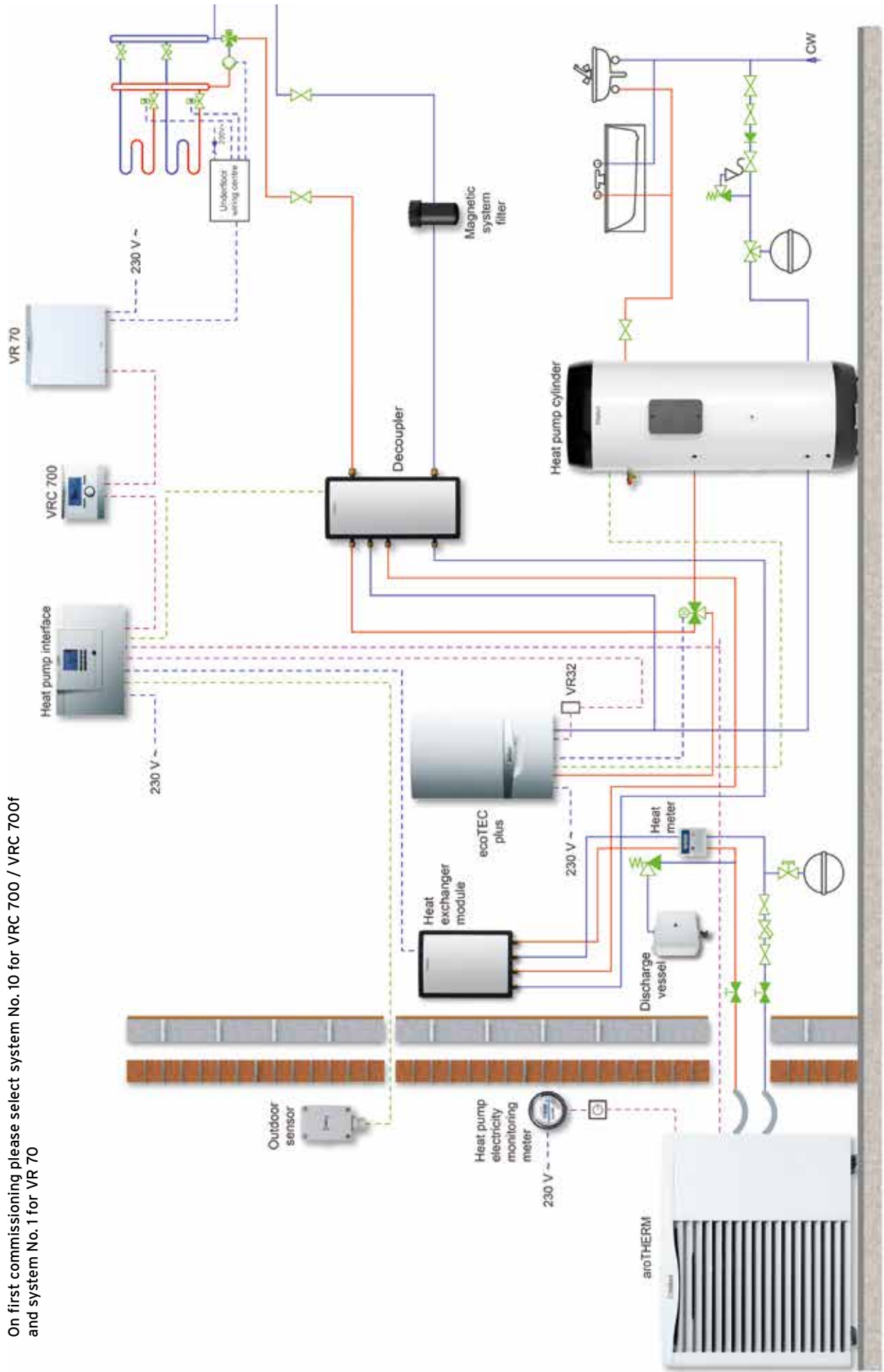
Hybrid, Vaillant combi boiler, heat exchanger module, decoupler, one zone - schematic

On first commissioning please select system No. 10 for VRC 700 / VRC 700f

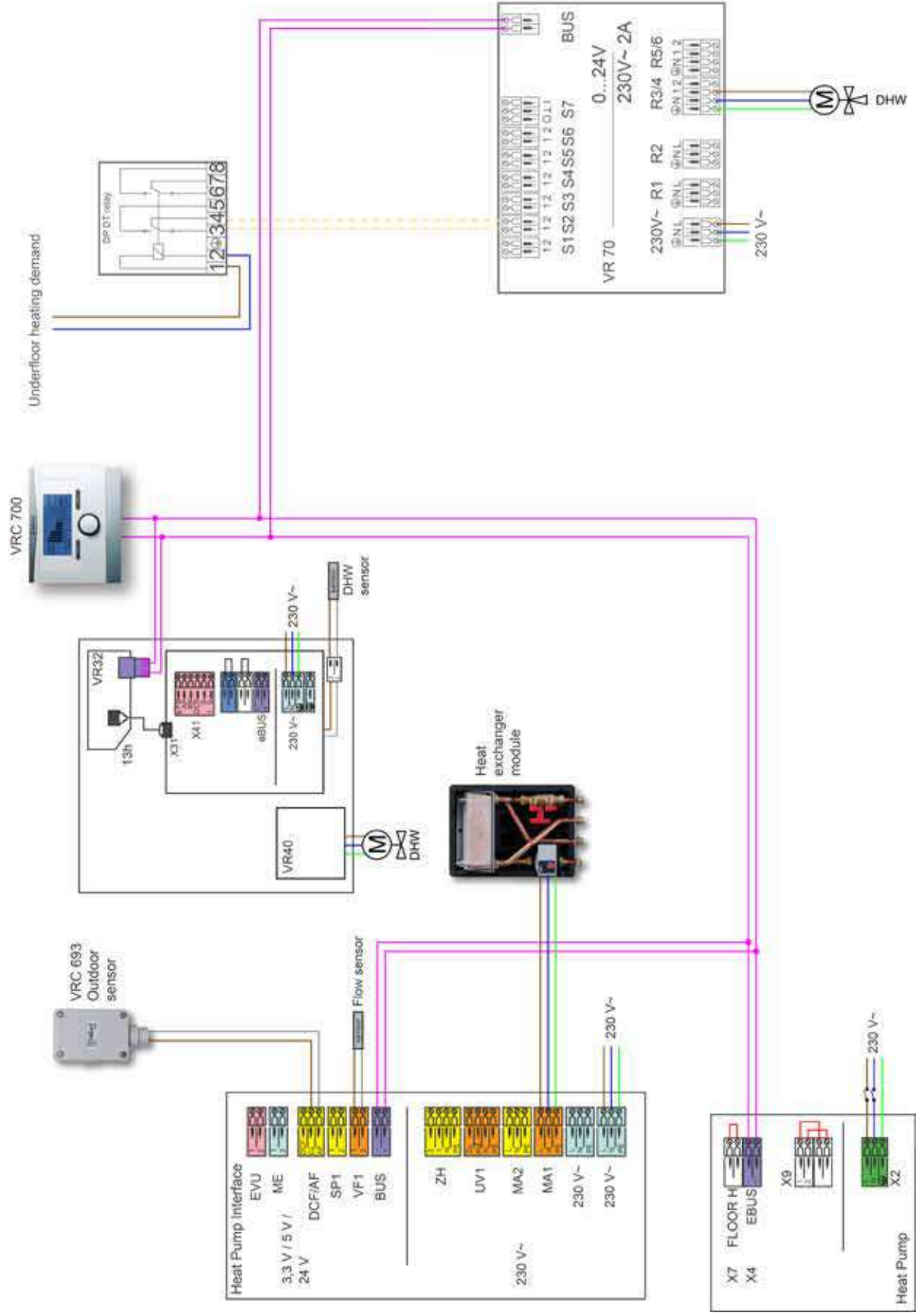


Hybrid, Vaillant system boiler, heat exchanger module, decoupler, U/F - schematic

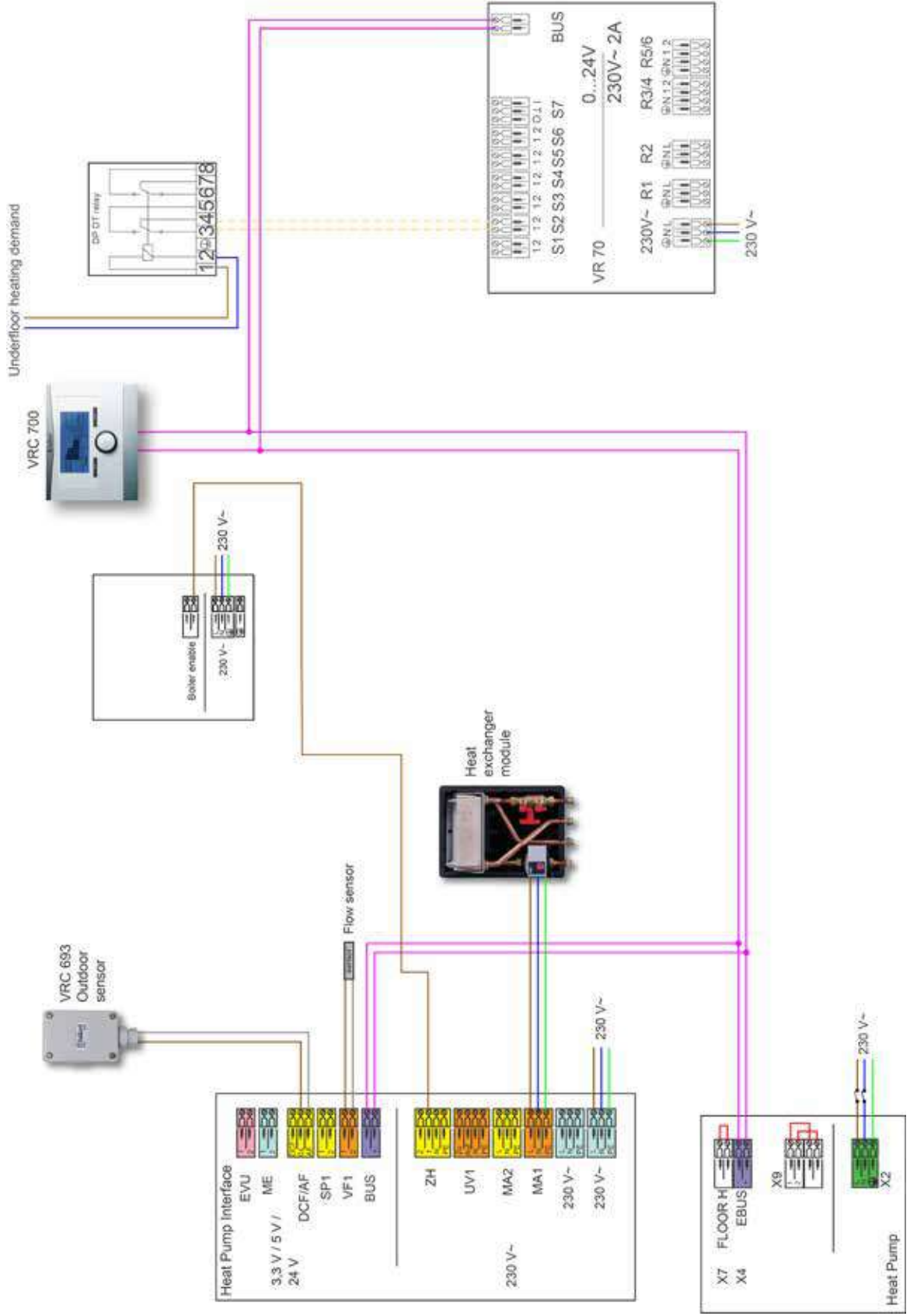
On first commissioning please select system No. 10 for VRC 700 / VR32 and system No. 1 for VR 70



Hybrid, Vaillant system boiler, heat exchanger module, decoupler, U/F - wiring

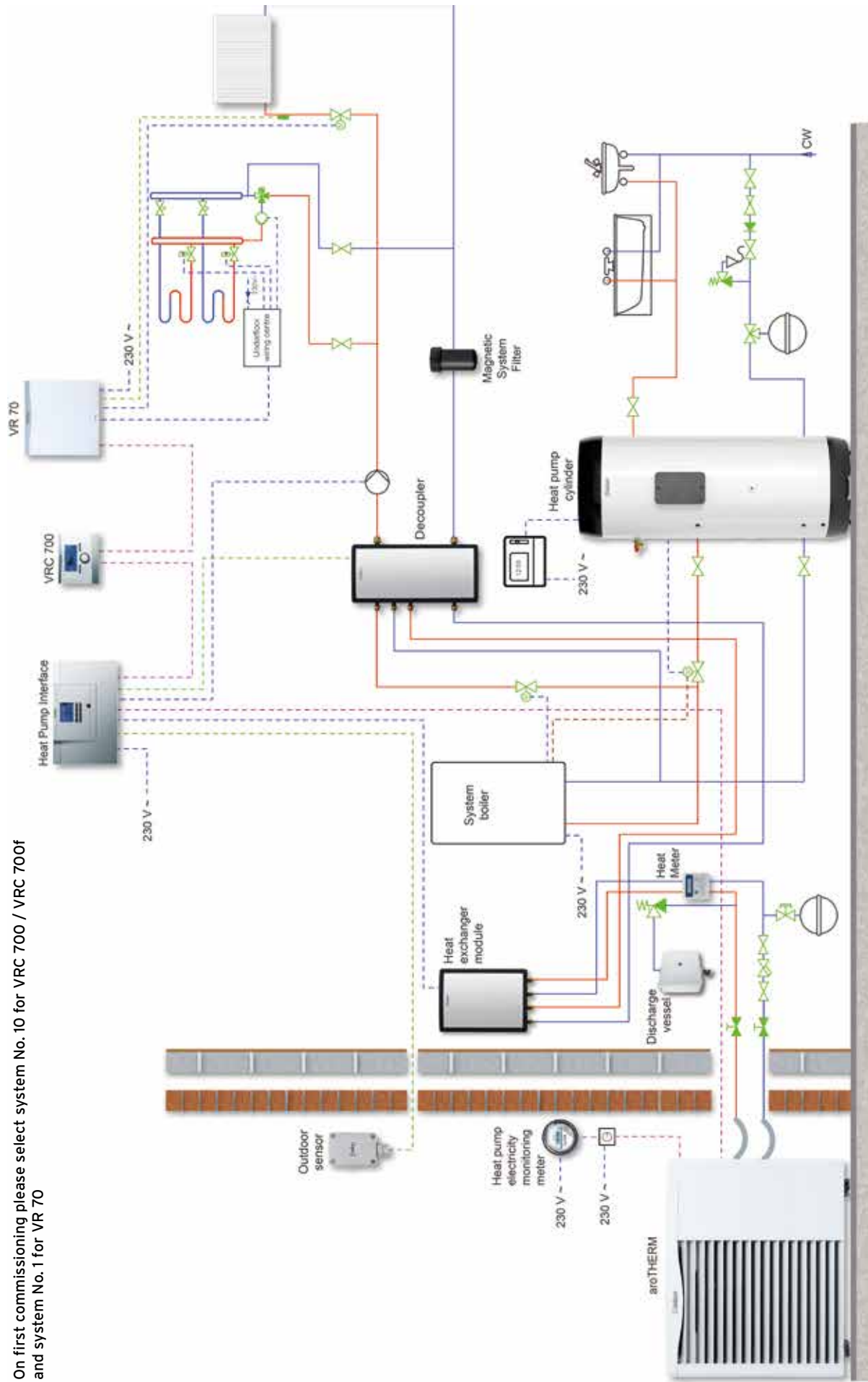


Hybrid, on/off third-party combi boiler, heat exchanger module, decoupler, U/F - wiring

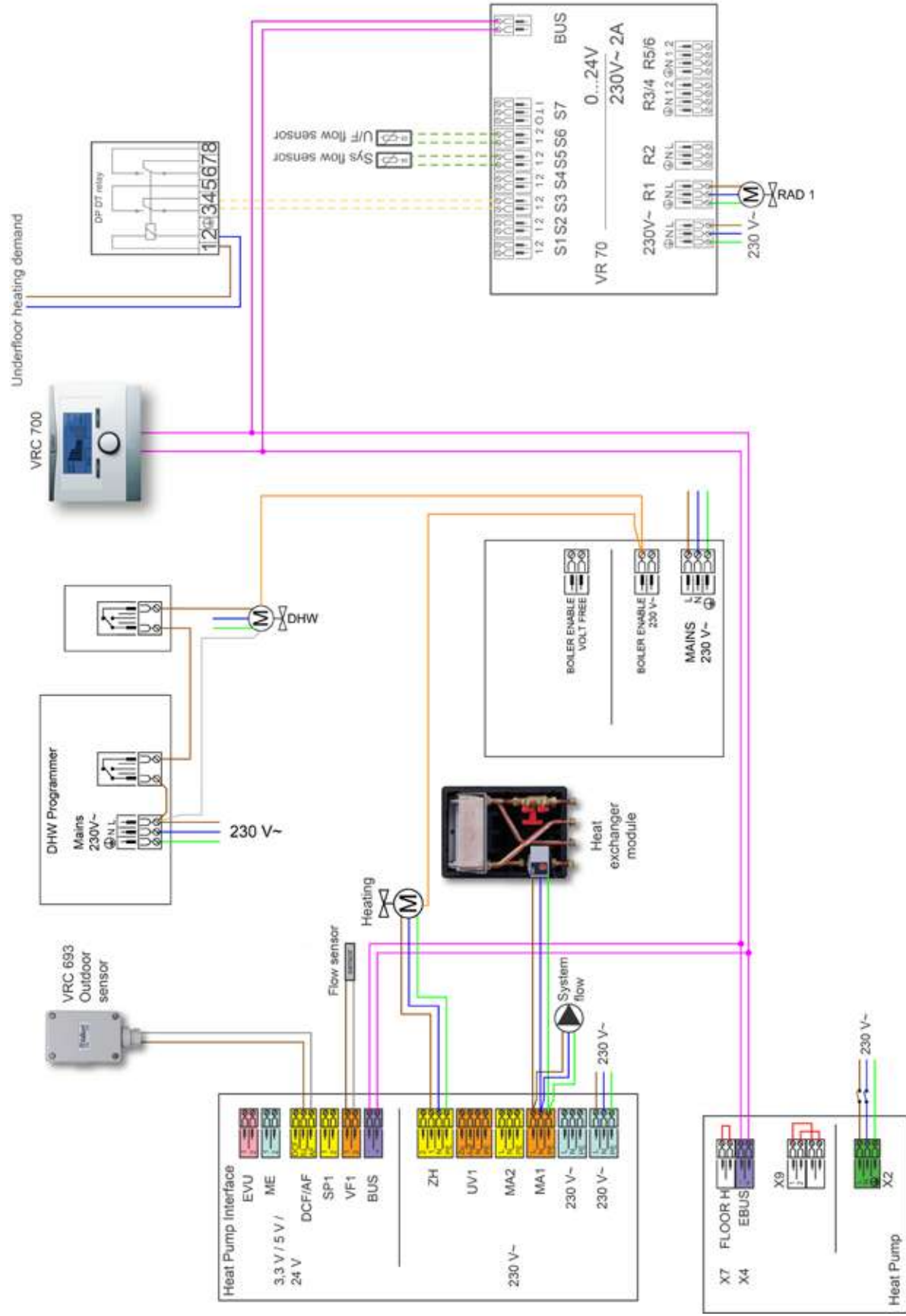


Hybrid, on/off third-party system boiler, heat exchanger module, decoupler, DHW tank, U/F, one zone - schematic

On first commissioning please select system No. 10 for VRC 700 / VRC 700f and system No. 1 for VR 70



Hybrid, on/off third-party system boiler, heat exchanger module, decoupler, DHW tank, U/F, one zone - wiring





As the industry's leading training provider, Vaillant offer comprehensive training courses designed to give you the skills, knowledge and understanding to help take your business forward.

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Our dedicated team of specialist engineers support any manufacturer in the UK.

Backed by an expertly trained call centre, they're available to assist you whenever you're installing renewable products. We also have an in-house systems design team, who are on hand to answer any queries you may have during the design stage.

Straightforward delivery

We will deliver your renewable system anywhere you want, be it directly to site or to the local trade counter where you place your order. On-site deliveries will arrive with the correct lifting equipment to ensure that the goods can be unloaded safely - it couldn't be easier.

Assisted commissioning*

Service engineers will visit the installation and guide you through the first system commissioning, helping with the final stages and the handover of the installation as needed.

* A charge may apply for this service.

Spares

Our UK stockists hold extensive supplies of our heat pump ranges and the majority of Vaillant spare parts so long lead times can be avoided, removing the need for extensive notice on orders. Should you have any difficulty in sourcing a particular item, then our customer service representatives are only a phone call away and will be happy to help you locate the spares you require.

Customer service support contact details

Sales Support

Vaillant products are available to purchase from reputable heating merchants in the UK. To find contact details for your nearest Vaillant representative:

Telephone: 0345 602 0262

Renewable Service

For renewable products aftersales servicing and commissioning:

Telephone: 0330 100 3540

Email: aftersales@vaillant.co.uk

Technical Enquiries

For technical assistance:

Telephone: 0330 100 3540

Email: aftersales@vaillant.co.uk

Training Enquiries

Vaillant provide many different training courses, for more information:

Telephone: 0345 601 8885

Email: training.enquiries.uk@vaillant-group.com

General enquiries

If you have a general enquiry our friendly reception staff will happily point you in the right direction:

Telephone: 0345 602 2922

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