moduthermm

AW290

50 kW

Commercial reversible air source heat pump
Heating & cooling



R290

OUTPUT (kW)

50 - 800

AW290 50kW

The AW290 is a high-performance, high temperature air source heat pump designed to meet heating, cooling, and domestic hot water demands in commercial applications, including apartment buildings, hotels, and schools. The AW290 utilises natural R290 refrigerant for exceptional energy efficiency and a reduced environmental impact.

Up to 16 units can be arranged in cascade to provide capacity up to 800kW, making them ideal for commercial installations.

Featuring the latest inverter technology, the AW290 ensures optimal system efficiency by automatically adjusting output to match heating demand. This guarantees stable operation even in colder conditions, maximising performance while minimising energy consumption.



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5 Year Compressor Warranty*

2 Year Parts Warranty*

EVI powered

The AW290 units are equipped with EVI technology, enabling high energy efficiency and stable performance. With inverter and EVI technology, the series reaches A+++ (35/55°C) energy efficiency and COP is up to 4.4.

R290 refrigerant

The units use R290 refrigerant, a natural and environmentally friendly alternative with a low global warming potential. R290 has been widely adopted in modern heat pump technology due to its excellent thermodynamic properties, delivering high efficiency and reliable performance in air-to-water heat pump applications.

R290 leak sensor

The integrated R290 leak sensor ensures safe operation with high sensitivity and a rapid 5-second response time. Designed for long-term reliability, it requires no calibration or maintenance and has an impressive 15-year lifespan, providing continuous protection and peace of mind.

Coastal protection

Optional high-performance coating available, to give C-4 high level coastal protection.

Refrigerant/water separator

The AW290 heat pump includes an automatic refrigerant/water separator, ensuring safe operation by preventing any gas from escaping into indoor spaces. This built-in safety feature helps maintain system efficiency and protects occupants from potential exposure.

- Monobloc design for easy installation
- Electronic expansion valve control for precise superheat regulation
- Modbus/BACnet communication
- Self-adjusting EEV control
- Inbuilt Grundfos pump

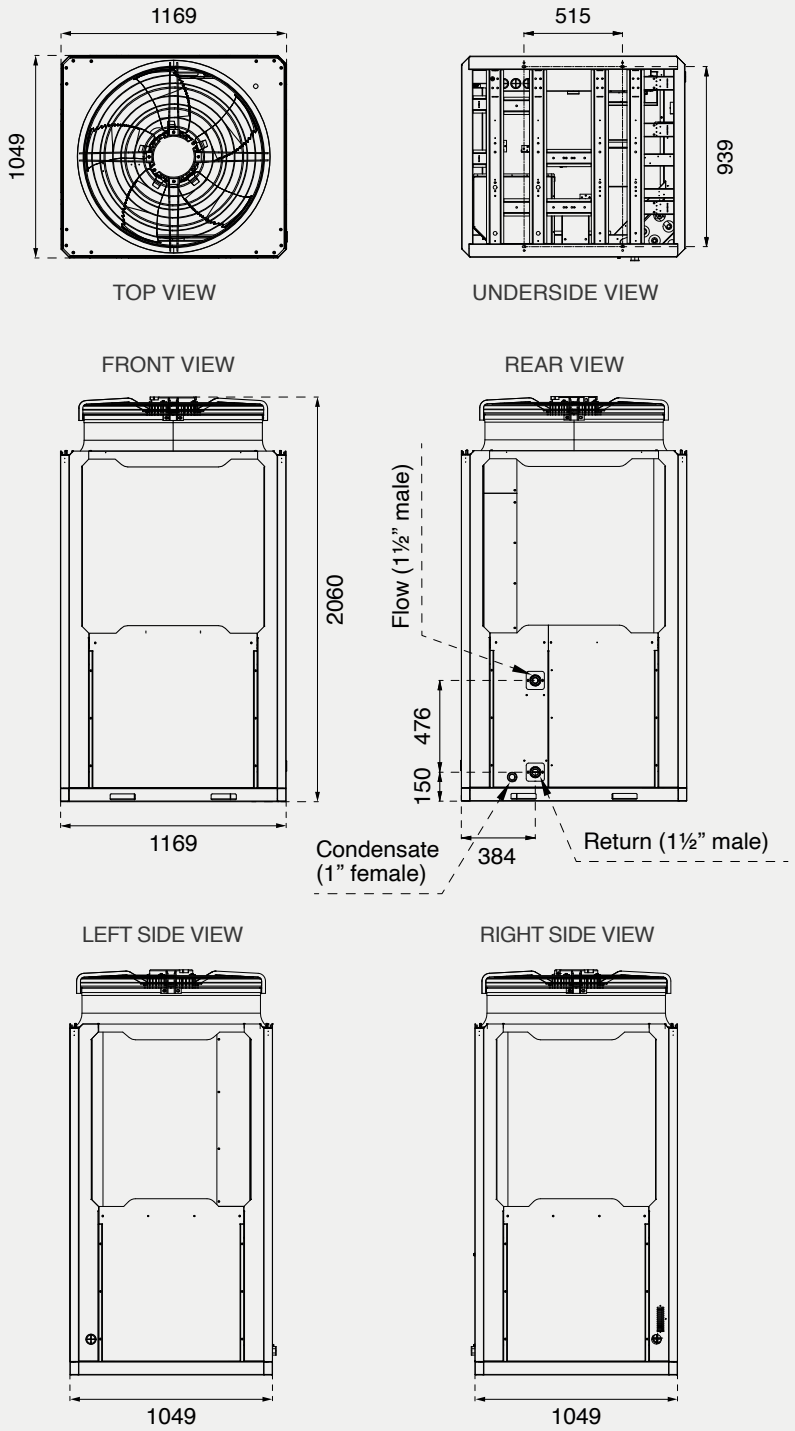
Energy efficiency	A+++ (35/55°C)
COP A7/W35	4.40
SCOP LWT35	4.69
Heating output	50kW
Max. flow temperature	85°C
Working range (min/max)	-30 / 43°C
Power supply	415V
Sound power level A7/W35 (partial/full load)	72 / 83 dB(A)

**Subject to Terms & Conditions*

Dimensions

50kW

Dimensions: mm



Service Clearances (mm)	
Front	1000
Rear	1000
Left	1000
Right	1000
Top	3000

For safety (ATEX) and vigilance zone clearances, please refer to the Engineering Data Book and Installation Guide.

Performance data

			50kW
Power supply		V / Ph / Hz	380-415 / 3 / 50
IP rating			IPX4
Performance			
Heating capacity at 35°C [1]	**Capacity**	kW	50.0
	Rated input	kW	11.36
	COP		4.40
Heating capacity at 45°C [2]	**Capacity**	kW	50.0
	Rated input	kW	13.44
	COP		3.72
Heating capacity at 55°C [3]	**Capacity**	kW	50.0
	Rated input	kW	15.53
	COP		3.22
Cooling capacity [4]	**Capacity**	kW	45.0
	Rated input	kW	10.23
	EER		4.40
Cooling capacity [5]	**Capacity**	kW	42.0
	Rated input	kW	14.0
	EER		3.00
Energy efficiency class			A+++
SCOP (Seasonal Coefficient of Performance)	**LWT at 35°C / 55°C**		4.69 / 3.93
SEER (Seasonal Energy Efficiency Ratio)	**LWT at 7°C / 18°C**		5.04 / 7.14
Operating temperature (min/max)	**Cooling**	°C	-5 / 43
	Heating	°C	-30 / 35
	DHW	°C	-30 / 43
Maximum flow temperature		°C	85
MOP (Maximum Overcurrent Protection)		A	65
MCA (Maximum Circuit Amps)		A	55
GWP (Global Warming Potential) **/ Equivalent CO_2e**		GWP / kg	0.02 / 0.0986
Sound power level (A7/W35) / (A7/W55)	**Partial load**	dB(A)	72 / 72
	Full load	dB(A)	83 / 85
Sound pressure level @ 1 metre (A7/W35) / (A7/W55)	**Partial load**	dB(A)	55 / 55
	Full load	dB(A)	66 / 68
Components			
Fan	**Motor type**		Brushless DC motor
	Number of fans		1
	Speed	rpm	700
Refrigerant	**Type**		R290
	Charge	kg	4.93
	System pressure (min/max)	MPa	0.03 / 3.5
Compressor	**Type**		EVI Scroll DC Compressor
	Quantity		1
Throttle type			Electronic expansion valve
Water side heat exchanger			Plate heat exchanger
Hydraulic			
Rated water pressure (min/max)		bar	1 / 6
Water pressure drop / Residual pump head		kPa	29 / 110
Rated water flow		m^3/h	8.60
Flow/return connections			1½" M
Dimensions			
Dimensions (L×D×H)	**Net**	mm	1169 × 1049 × 2060
	Packaging	mm	1271 × 1151 × 2260
Weight	**Net**	kg	445
	Gross	kg	475

LWT = Leaving Water Temperature
EWT = Entering Water Temperature

[1] Outdoor air temperature 7°C DB, 85% R.H ; EWT 30°C, LWT 35°C
[2] Outdoor air temperature 7°C DB, 85% R.H ; EWT 40°C, LWT 45°C
[3] Outdoor air temperature 7°C DB, 85% R.H ; EWT 47°C, LWT 55°C
[4] Outdoor air temperature 35°C DB ,85% R.H ; EWT 23°C, LWT 18°C
[5] Outdoor air temperature 35°C DB ,85% R.H ; EWT 12°C, LWT 7°C

Operating conditions

External temperature °C	Flow temperature °C	Heat output kW	COP	Input power kW	Input current A
-20	35	42.1	1.63	25.8	41.9
	45	41.4	1.56	27.2	43.6
	55	40.5	1.51	26.8	42.9
	65	40.1	1.47	27.3	43.7
-15	35	44.1	1.96	22.5	34.8
	45	43.9	1.83	24.0	36.8
	55	43.6	1.74	25.0	38.9
	65	43.2	1.66	26.0	42.1
	75	43.0	1.58	27.2	43.6
-10	35	50.1	2.02	24.6	37.8
	45	50.1	1.90	26.3	40.5
	55	48.1	1.81	26.6	42.7
	65	45.4	1.70	26.7	42.8
	80	43.1	1.59	27.1	43.1
-7	35	50.4	2.18	23.1	36.1
	45	49.5	2.04	24.3	37.3
	55	47.9	1.95	24.5	37.3
	65	46.8	1.80	26.0	40.1
	80	40.2	1.72	23.4	36.1
-5	35	50.0	2.40	20.8	32.0
	45	49.3	2.18	22.6	34.9
	55	50.4	1.99	25.3	39.1
	65	48.3	1.86	26.0	40.4
	80	41.1	1.80	22.8	35.1
-2	35	50.0	2.80	17.9	27.4
	45	49.7	2.52	19.8	30.6
	55	50.0	2.27	22.0	33.8
	65	49.1	2.10	23.4	36.3
	80	48.9	1.81	27.0	43.0
0	35	50.0	3.06	16.3	25.6
	45	49.5	2.67	18.5	29.0
	55	50.0	2.42	20.7	31.9
	65	50.6	2.09	24.3	37.6
	80	50.4	1.80	28.0	43.2
7	35	50.1	4.44	11.3	18.2
	45	50.1	3.72	13.5	21.0
	55	50.3	3.18	15.8	24.5
	65	50.7	2.68	18.9	29.3
	80	49.9	2.19	22.8	34.9

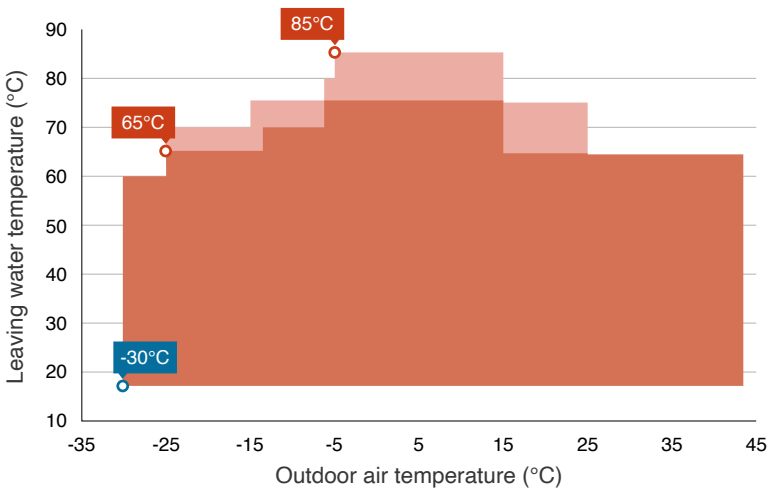
Performance envelope

85°C Ultra-high leaving water temperature

-30°C Extremely low working (air) temperature

High temperature

Normal temperature



Schematics

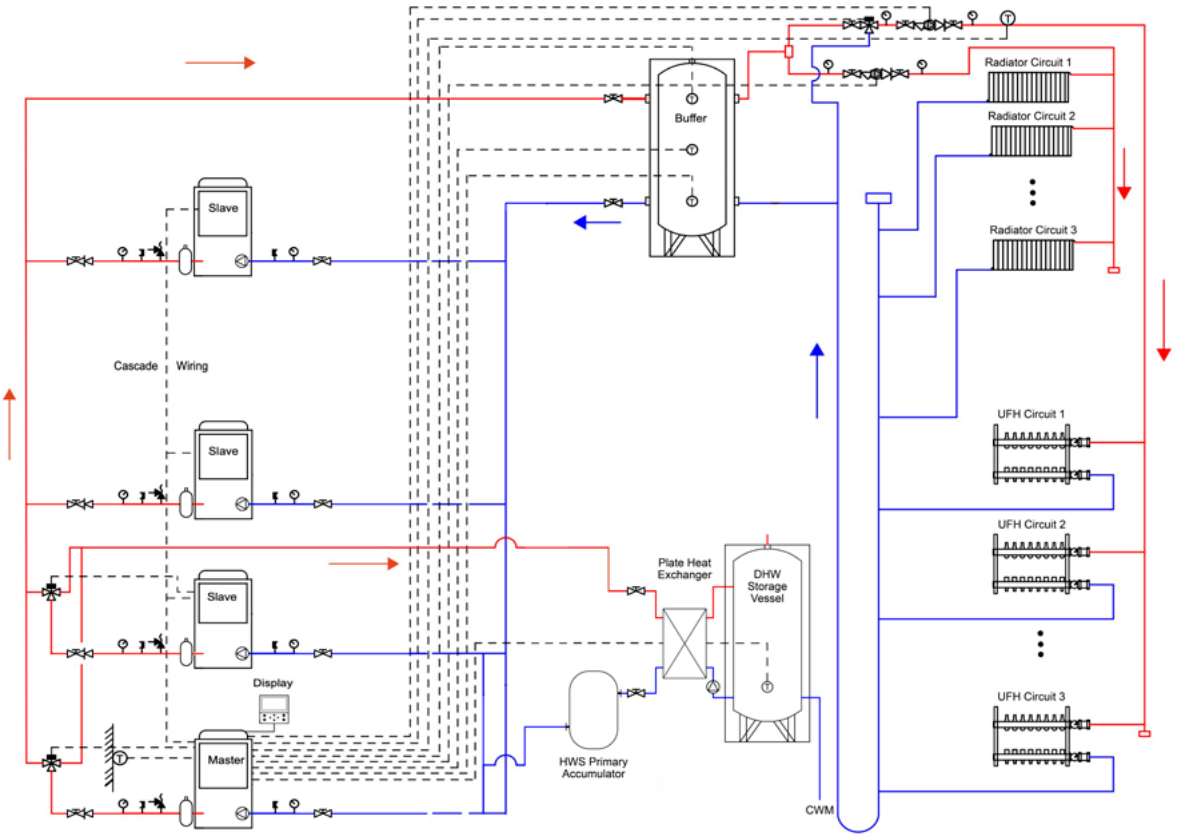
Simplified diagram for illustration only - safety devices may have been omitted for clarity.

For additional schematics, refer to the installation guide.

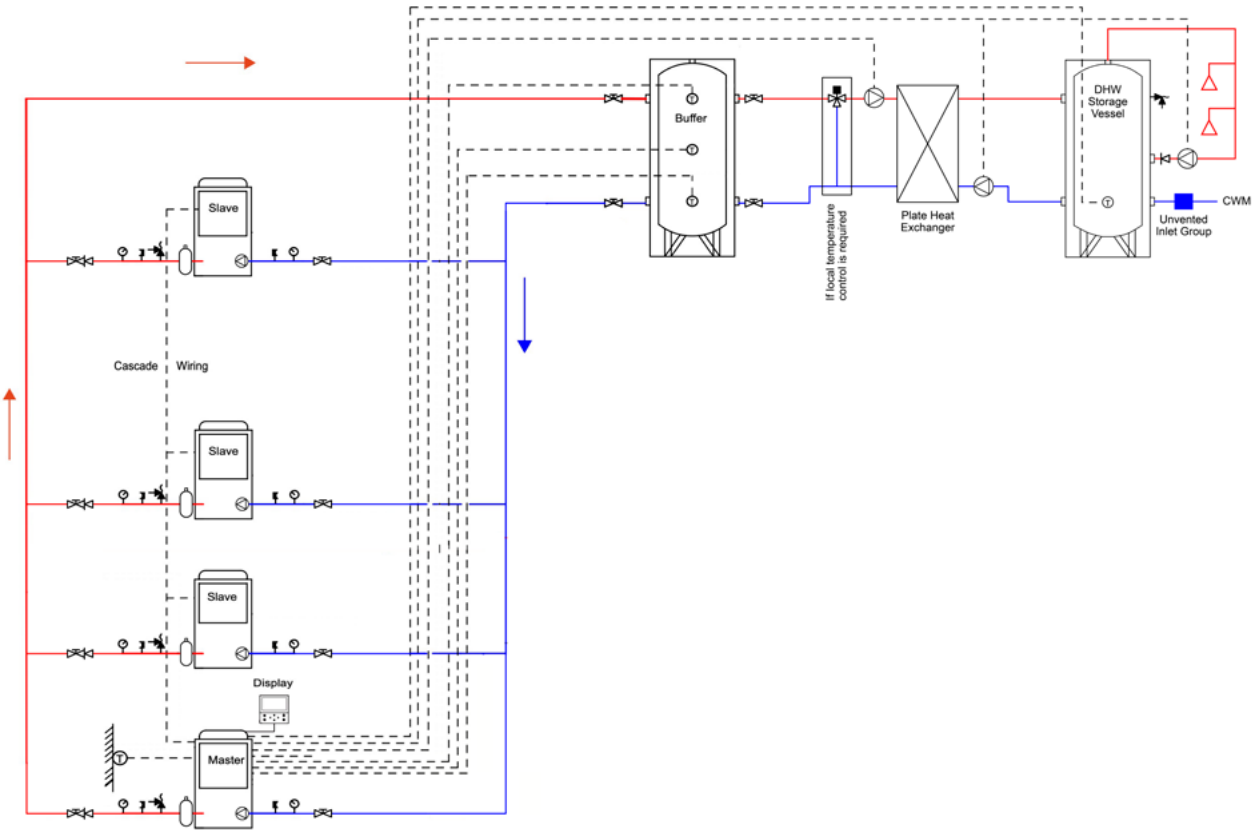
Symbol	Description
	Isolating valve
	Check valve
	Circulation pump
	Pressure gauge

Symbol	Description
	Strainer
	Temp sensor
	3-way valve
	Degasser
	Safety valve

Heating & DHW with Plate Heat Exchanger



DHW only



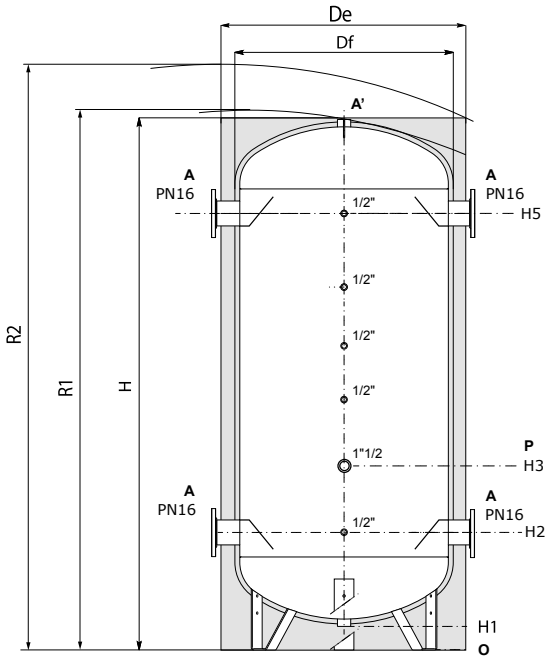
Heat pump buffer vessels

- Mild steel construction
- 7 bar working pressure
- 5x ½" sensor points
- 1½" connection for immersion heater

A Flanged connection

O Drain

P Connection for immersion heater

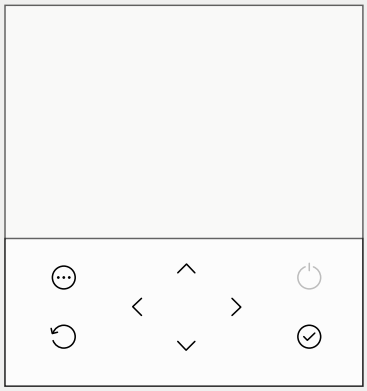


Model	Volume litres	Weight kg	Df	De	H	R1	R2	H1	H2	H3
			mm							
500	478	77	650	910	1880	1940	2030	130	441	741
800	758	105	750	1010	2113	2240	2330	120	413	813
1000	987	141	850	1110	2232	2300	2400	105	479	879
1500	1435	200	950	1250	2492	2650	2760	130	537	927
1500-C	1528	222	1100	1400	2038	2214	2474	104	548	713
2000	1973	233	1100	1400	2537	2750	2870	105	547	710
2500	2294	397	1250	1390	2324	2650	2700	143	682	919
3000	2988	432	1440	1540	2378	2790	2840	127	711	998
4000	3914	494	1600	1740	2436	-	-	105	719	956
5000	4970	714	1600	1740	2936	-	-	105	719	1006

Controller

The AW290 comes with an advanced controller designed for seamless integration and optimal system performance. Offering precise control and monitoring, it enhances efficiency, flexibility, and ease of use across various applications.

- Cascade control for up to 16 heat pumps
- 0-10V control for seamless system integration
- Three-zone control with diverter valve management
- Modbus/BACnet compatibility for BMS integration
- Weather compensation for enhanced efficiency
- Quiet mode for reduced noise operation
- Real-time energy data: capacity, consumption, and COP
- Weekly scheduling for customised operation
- Frost protection to prevent system damage
- SG ready for smart grid compatibility
- Power-off memory to retain settings after shutdown



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