AW290

35 kW

Commercial reversible air source heat pump
Heating & cooling



R290

OUTPUT (kW)

35 - 560

AW290 35kW

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 560kW, 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.



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 4.2.

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.

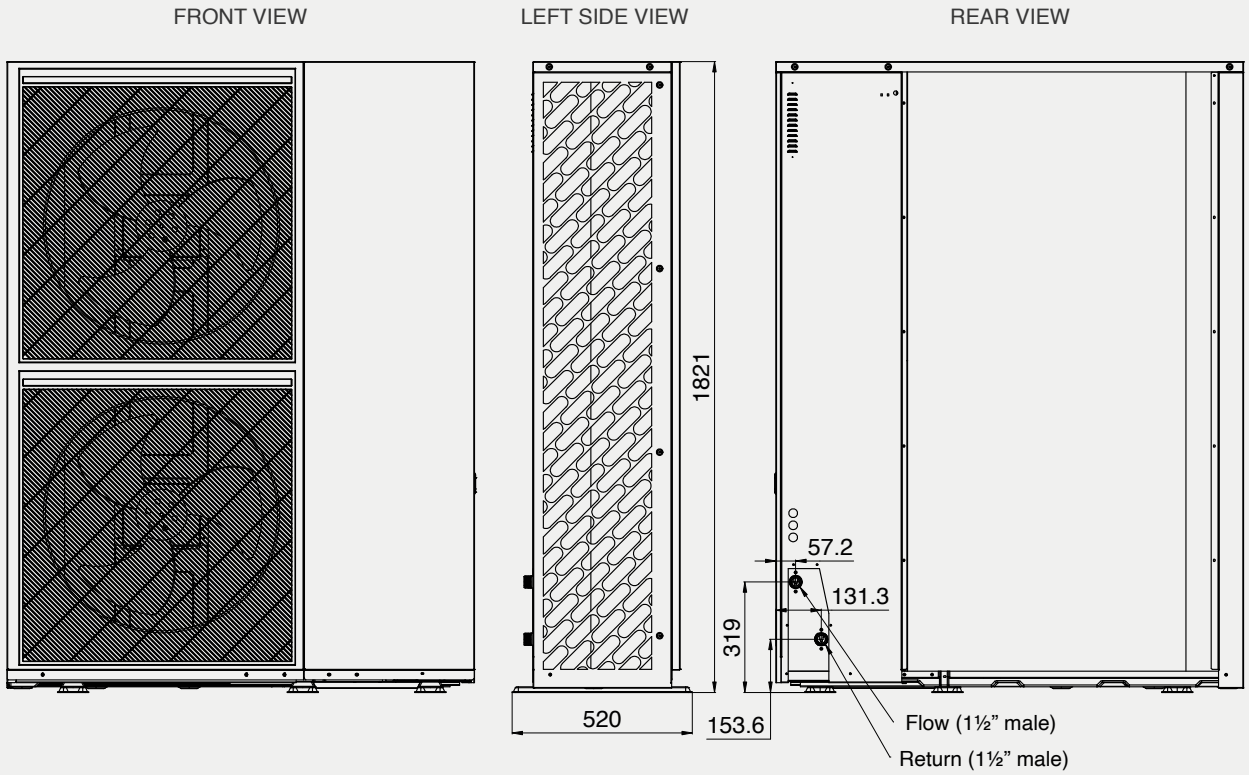
- Monobloc design for easy installation
- Electronic expansion valve control for precise superheat regulation
- Modbus/BACnet communication
- Self-adjusting EEV control
- Inbuilt pump

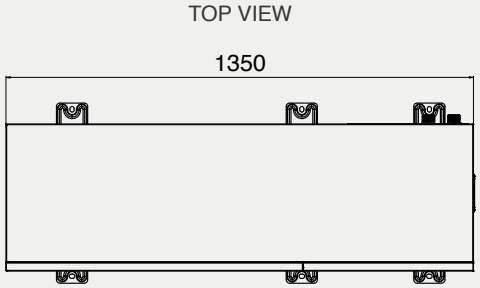
Energy efficiency	A+++ (35/55°C)
COP (A7/W35)	4.20
SCOP (LWT35)	4.59
Heating output	35kW
Max. flow temperature	85°C
Working range (min/max)	-30 / 43°C
Power supply	415V
Sound power level	70 dB(A)

**Subject to Terms & Conditions*

Dimensions

Dimensions: mm





Service Clearances (mm)	
Front	3000
Rear	500
Left	1000
Right	1000
Top	1000

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

Performance data

			35kW
Power supply		V / Ph / Hz	380-415 / 3 / 50
IP rating			IPX4
Performance			
Heating capacity at 35°C [1]	**Capacity**	kW	35.0
	Rated input	kW	8.33
	COP		4.20
Heating capacity at 45°C [2]	**Capacity**	kW	35.0
	Rated input	kW	10.57
	COP		3.31
Heating capacity at 55°C [3]	**Capacity**	kW	35.0
	Rated input	kW	12.92
	COP		2.71
Cooling capacity [4]	**Capacity**	kW	28.0
	Rated input	kW	6.65
	EER		4.21
Cooling capacity [5]	**Capacity**	kW	24.0
	Rated input	kW	8.30
	EER		2.89
Energy efficiency class			A+++
SCOP (Seasonal Coefficient of Performance)	**LWT at 35°C / 55°C**		4.59 / 3.83
SEER (Seasonal Energy Efficiency Ratio)	**LWT at 7°C / 18°C**		5.12 / 7.26
Operating temperature (min/max)	**Cooling**	°C	-5 / 43
	Heating	°C	-30 / 43
	DHW	°C	-30 / 43
Maximum flow temperature		°C	85
MOP (Maximum Overcurrent Protection)		A	30
MCA (Maximum Circuit Amps)		A	28
GWP (Global Warming Potential)			0.02
Equivalent CO_2e		kg	0.06
Sound power level [6]		dB(A)	74
Sound pressure level @ 1 metre (A7/W55)		dB(A)	53
Components			
Fan	**Motor type**		Brushless DC motor
	Number of fans		2
	Speed	rpm	750
Refrigerant	**Type**		R290
	Charge	kg	3
	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		kPa	15
Residual pump head		kPa	69
Rated water flow		m^3/h	6.02
Flow/return connections			1½" M
Dimensions			
Dimensions (L×D×H)	**Net**	mm	1350 × 520 × 1821
	Packaging	mm	1415 x 535 x 1998
Weight	**Net**	kg	285
	Gross	kg	312

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
[6] Test standard: EN12102-1

Operating conditions

External temperature °C	Flow temperature °C	Heat output kW	COP	Input power kW	Input current A
-15	35	32.2	1.91	16.9	22.3
	45	31.2	1.87	16.7	22.1
	55	30.9	1.84	16.8	22.5
	60	25.9	1.55	16.7	22.1
	65	20.4	1.23	16.6	22.1
	75	18.6	1.13	16.4	22.0
-10	35	34.0	2.02	16.8	22.3
	45	33.8	2.01	16.8	22.5
	55	33.2	1.99	16.7	22.1
	65	27.3	1.65	16.5	21.9
	70	25.3	1.53	16.5	22.0
	75	21.3	1.29	16.5	21.8
	80	19.3	1.15	16.8	22.1
-7	35	34.1	2.21	15.4	21.3
	45	33.9	2.19	15.5	21.3
	55	33.5	2.13	15.7	21.7
	65	28.0	1.84	15.2	21.0
	70	25.9	1.71	15.1	20.8
	75	21.8	1.43	15.3	21.0
	80	19.5	1.24	15.7	21.7
-5	35	34.1	2.43	14.0	19.5
	45	34.1	2.31	14.7	20.3
	55	34.0	2.27	15.0	20.6
	65	28.2	1.91	14.8	20.3
	70	26.1	1.75	14.9	20.5
	75	22.0	1.49	14.8	20.3
	80	19.2	1.25	15.4	21.2
-2	35	34.2	2.77	12.3	17.1
	45	34.1	2.45	13.9	19.3
	55	34.0	2.29	14.9	20.4
	65	29.2	2.02	14.5	20.1
	70	26.9	1.91	14.1	19.4
	75	22.8	1.51	15.1	20.8
	80	19.1	1.27	15.0	20.7
0	35	34.3	3.01	11.4	16.1
	45	34.1	2.57	13.3	18.7
	55	34.1	2.31	14.8	20.3
	65	30.2	2.03	14.9	20.5
	70	27.8	1.93	14.4	20.1
	75	23.5	1.53	15.3	21.2
	80	20.1	1.29	15.6	21.5
7	35	35.0	4.20	8.3	12.1
	45	35.0	3.31	10.6	14.5
	55	35.0	2.71	12.9	18.3
	65	30.6	2.28	13.4	19.1
	70	28.0	2.07	13.5	19.2
	75	24.2	1.61	15.0	20.7
	80	20.0	1.31	15.3	20.1

Schematic

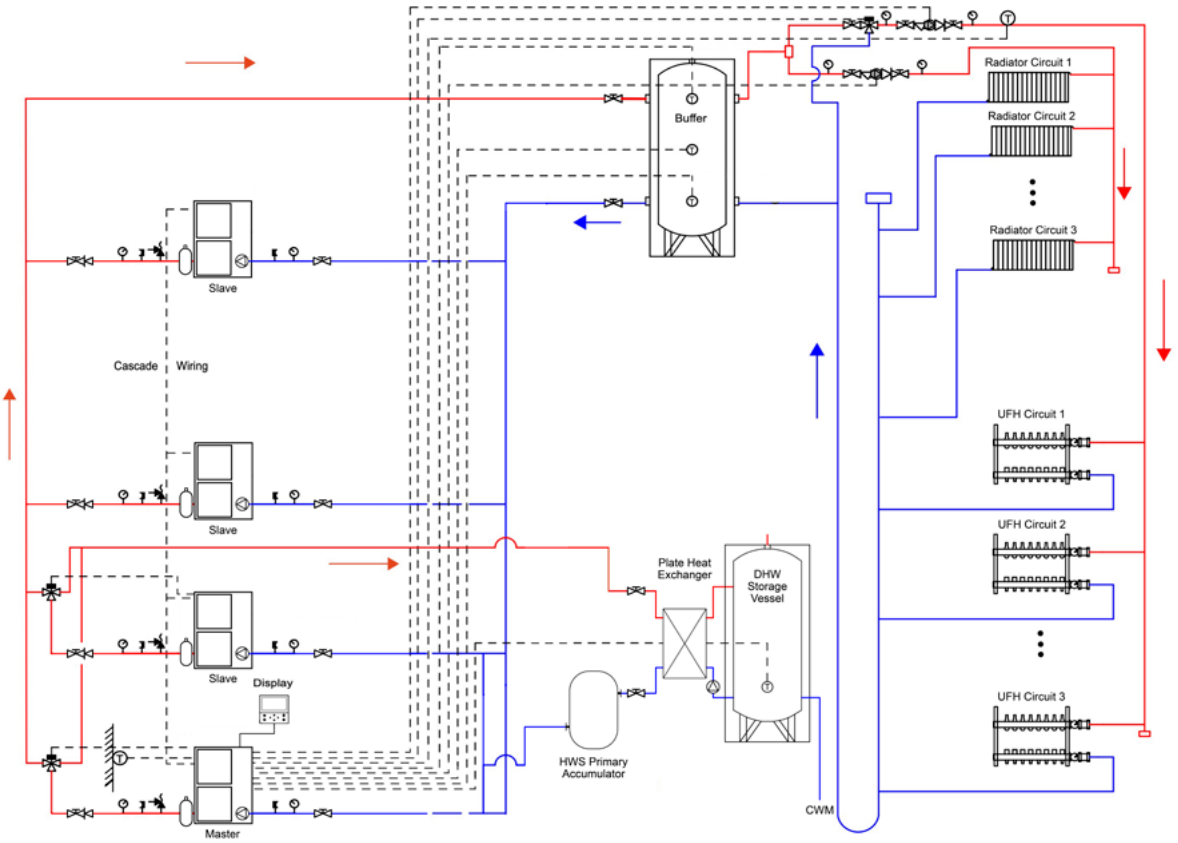
Simplified diagram for illustration only - safety devices may have been omitted for clarity.

For additional schematics, refer to the installation guide.

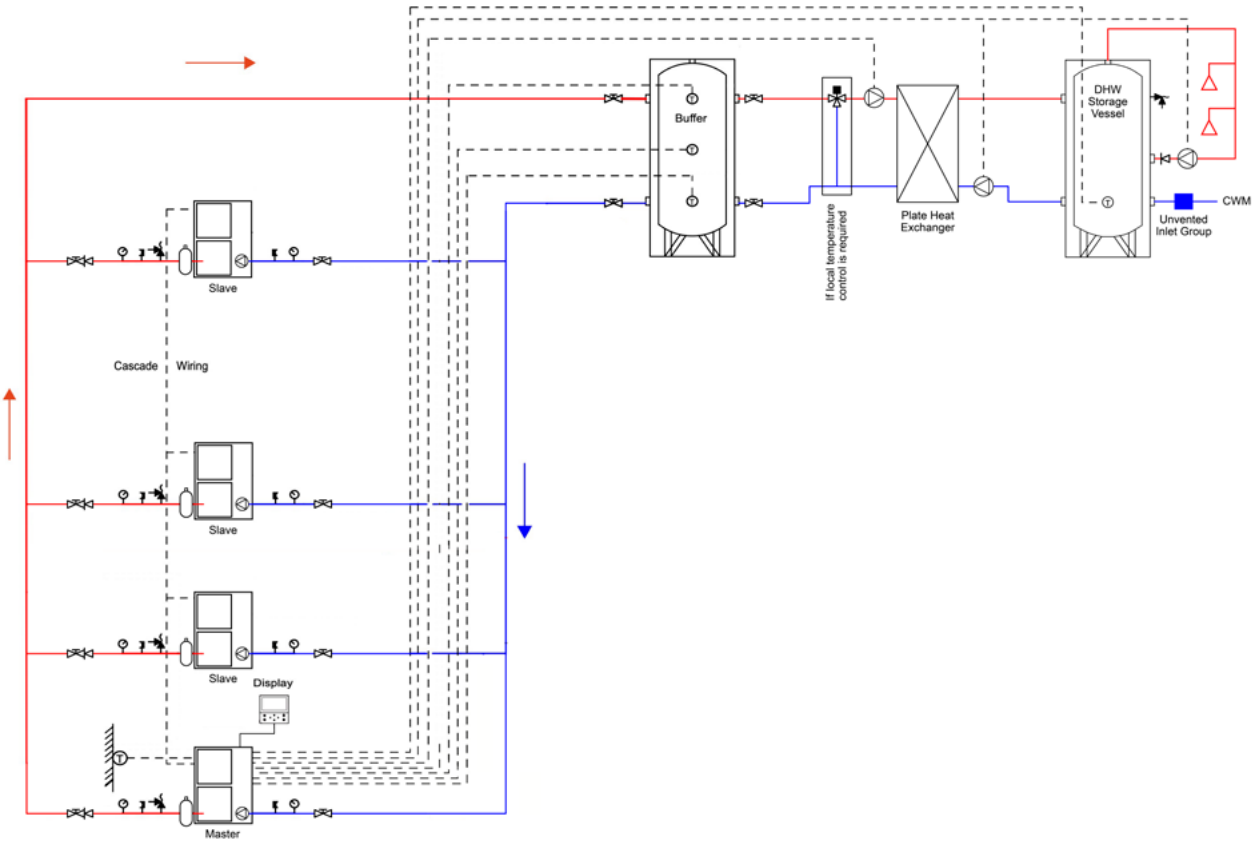
Symbol	Description
	Isolating valve
	Check valve
	Circulation pump
	Pressure gauge

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

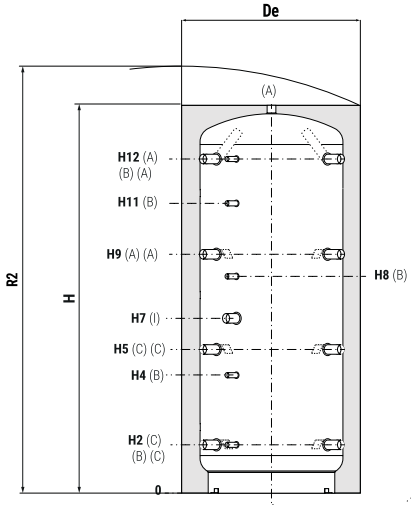
Heating & DHW with Plate Heat Exchanger



DHW only



Buffer vessels



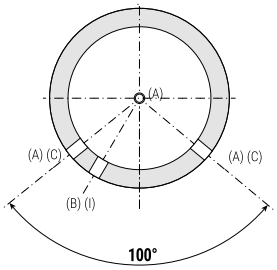
3 bar

A/C To the system (300L: 1.5" F)

B Connection for instrumentation (½" F)

I Connection for electric immersion heater (1½" F)

← 300L

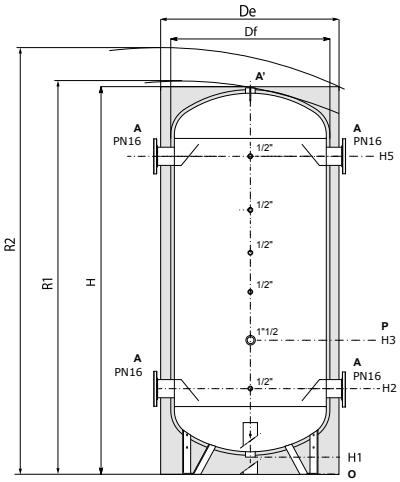


500/800/1000L →

A Flanged connection

O Drain

P Connection for immersion heater



6 bar

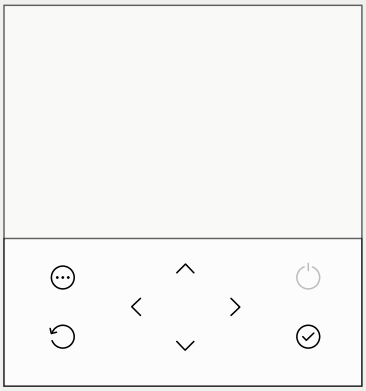
Model	Volume litres	Weight kg	De (VB)	H	R2	H2	H4	H5	H7	H8	H9	H11	H12
								mm					
300	279	51	650	1340	1495	232	444	514	590	725	796	885	1078

Model	Volume litres	Weight kg	Df	De	H	R1	R2	H1	H2	H3	H4	H5	O	A'	A
									mm						
500	478	77	690	910	1805	1940	2030	130	405	705	1205	1455	1¼"	1¼"	DN80 PN16
800	758	105	750	1010	2113	2240	2330	120	415	815	1415	1715	1¼"	1¼"	DN80 PN16
1000	987	141	890	1110	2115	2300	2400	105	425	825	1425	1725	1½"	1½"	DN100 PN16

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



Modutherm Limited
Unit 4 Genesis
Endeavour Drive
Basildon, SS14 3WF

Modutherm® Limited
modutherm.co.uk
Tel: 0345 521 5666
modutherm@modularhg.co.uk

Your local contact is:

A division of the
MODULAR HEATING GROUP

CB/021126