

SAMSUNG

EHS Mono R290

High-performance heating
for modern homes.



Scan to learn more

Modern comfort with an advanced heating system

Say goodbye to traditional heating and hot water systems. The Samsung EHS Mono R290 is a compact, heat pump that extracts heat from the ambient air to heat up water for your house. This delivers yearround comfort with low environmental impact. Designed for modern living and legacy homes alike, it uses R290 - a natural refrigerant with a CO2 equivalent of just 3kg for each kg of R290 (Global Warming Potential 3), meeting EU regulations for 2025 and beyond.



The EHS Mono R290 provides optimal heating, cooling and domestic hot water and is available in 5, 8, 12, and 16 kW. The required capacity can be recommended by your installer. This sleek unit is powerful enough to provide reliable heating even at -10°C^1 , while offering a hot water supply up to 75°C^2 , perfect for homes with traditional radiators or upgrading from older systems.

The Samsung EHS Mono R290 without Pump is not an 'all-in-one' unit, it works together with an indoor unit, such as a ClimateHub, Wall-Mounted Hydro Unit or Control Kit to provide a complete heating and hot water solution.



Easy installation



higher temperature



quiet operation



connectivity



aesthetic design



malfunction
assistance from
distance

A+++/A++



A+++

35°C water temperature



A++

55°C water temperature

¹ Domestic hot water (DHW) leaving the DHW tank is 70°C when the outdoor temperature is -10°C to -43°C . If the outdoor temperature is lower than -10°C , a boost heater is required. Results may vary depending on the actual usage conditions.
² Leaving water temperature when the outdoor temperature is -10°C to -35°C . Results may vary depending on the actual usage conditions.

Hot water up to 75°C, even in freezing temperatures

Many homes across Europe – especially older ones – still rely on traditional radiators, which require a water temperature of 65°C or higher for effective room heating. Most standard heat pumps can't reach these levels without an extra booster or electric heaters. That's why the EHS Mono R290 stands out and keeps your home warm with water temperatures up to 75°C², and up to 70°C when it's -10°C¹ outside, making it the perfect replacement for older systems and a future-proof upgrade from gas boilers.

Explore our
solutions
in action:



Case study
Schagen



Case study
Richmond



The EHS
Mono R290



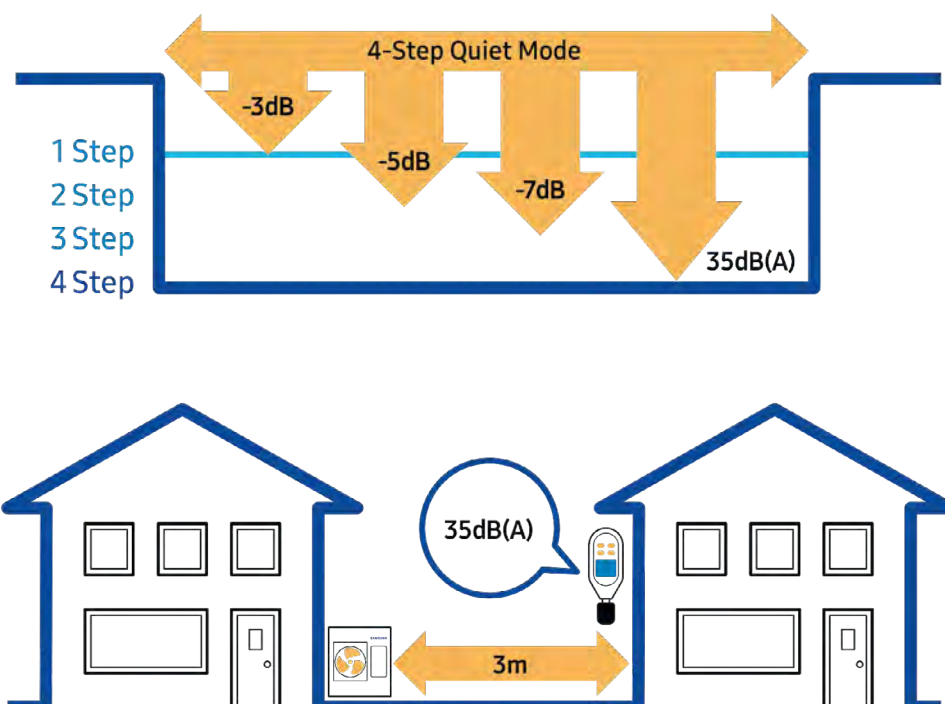
EHS village

Quiet performance, powerful output

With 4-step Quiet Mode and patented noise-reducing technology, the unit runs at just 35 dB(A)³—that's quieter than a typical fridge. It's patented Groove Grid Felt insulation system⁴ blocks vibration and sound for a peaceful home environment.

³ Based on internal testing of the EHS Mono R290 outdoor unit. The noise level is measured 3m away from the front of the outdoor unit, in an anechoic room with an outside temperature of 7°C. Results may vary depending on environmental factors and individual use.

⁴ Patent No.: P2022-0012826



Faster, easier installation

Save time and space with integrated components like the pump, expansion tank, and WiFi module. The EHS Mono R290 with Pump is ready to install and connect, requiring less indoor space. Internal parts are easily accessible through a side panel – secured with just three screws – simplifying both installation and servicing.

Remote monitoring via the EHS Cloud Service⁵ allows your installer to check the system status from a distance. This enables faster diagnostics, reduces downtime and may help avoid unnecessary home visits – offering quicker support when it's needed the most.

⁵ Only available on Samsung products which are compatible with this service and to the extent the end-user has agreed to the terms and conditions of the service and consented to the privacy notice applicable. A separate Wi-Fi Kit may be required for the EHS unit.



High capacity in a compact design

Available in four capacities: 5, 8, 12, or 16 kW, your installer will recommend the right capacity based on your home's needs. The compact 5 and 8 kW models are just 850mm high, while the larger sizes 12 and 16 kW models remain discreet at 1000mm. Perfect for small gardens or modern facades.

Made to work for modern living

The EHS Mono R290 is not only powerful but also built for long-lasting, safe operation in residential homes. It delivers high performance while staying ahead of evolving EU environmental regulations. To ensure safe and efficient operation with R290, the system is equipped with:

1. Reinforced components to handle higher pressure and prevent leakage
2. Leak detection sensors for added safety, that monitor the refrigerant and water pressure
3. Automatic exhaust system to prevent gas buildup and provide ventilation
4. Ignition prevention design, sealing sensitive areas from risk

These innovations not only meet upcoming EU requirements concerning refrigerant regulations, but they are also designed to give you and your installer greater confidence in daily use.

Built to perform

Improved compression parts of the EHS Mono R290 compressor⁶, ensuring durability and performance under pressure. The unit also has an up to 39.6% larger⁷ heat transfer area, exchanging heat quickly and efficiently.

⁶ Compression ratio = Discharge pressure / Suction pressure. Based on internal testing on an EHS MONO R290 12/16kW outdoor unit, compared to a DVM R410A outdoor unit.

⁷ Based on Samsung's measurements on an EHS R290 Mono (AE080CKYDGG/EU) model compared to a conventional outdoor unit (AE080RXYDGG/EU) with the same capacity.

Blends into modern homes

Finished in sleek dark grey, the EHS Mono R290 is styled for modern living. Its angled grille design hides internal parts⁸ and suits everything from heritage renovations to new builds.

⁸ Based on viewing height of 1700mm and viewing distance of 1 meter.



Smart connectivity for smarter homes

With SmartThings Energy⁹ the EHS Mono R290 becomes part of your connected home, giving you full control over your home's heating system through your smartphone, wherever you are.

- Monitor your energy use in real time: see how much energy your heating system is using and spot trends that can help you save.
- Control your heating from anywhere: adjust the temperature, schedule heating times according to your routine, or turn the system on or off — all from your smartphone.
- Save energy with AI Energy mode¹⁰: let SmartThings help you reduce unnecessary energy¹¹ use with intelligent settings that adapt to your lifestyle.
- Connect SmartThings to other home appliances for enhanced convenience and energy saving, and create a smarter and more integrated home experience.

Simple to use and packed with powerful features, SmartThings gives you more control over your comfort, efficiency, and costs — all from one easy-to-use app.

⁹ Available on Android and iOS devices. A Wi-Fi connection, a Samsung account and an optional Wi-Fi Kit (MIM-H04N) are required.

¹⁰ SmartThings AI Energy mode, when used by the end-user, can provide users with the possibility to save energy with their domestic hot water usage based on (repeatable) user patterns. The actual energy savings vary and depend on, amongst others, usage and operating conditions. The AI Energy mode may impact the product performance. End-user may deactivate the AI Energy mode at any time.

¹¹ Amount of costs saved is dependent on various factors such as a user's electricity plan, indoor/outdoor temperature and other usage conditions. With the SmartThings App, users may, for example, program the relevant Samsung indoor unit when the electricity price is offered at its lowest price or turn off the unit when not in use to minimise energy consumption.

Compatibility chart



**Outdoor unit
EHS Mono R290**

Capacity kW	5.0	8.0	12.0	16.0
Without Pump				
ClimateHub 200L	•	•	•	•
ClimateHub 260L	-	•	•	•
Hydro Unit	•	•	•	•
Control Kit	•	•	•	•
With Pump				
Outdoor Unit	•	•	•	•

Specifications

- Production of hot water to a maximum temperature of 75 °C
 - Low Ambient temperature operation
 - SmartThings compatible
 - 100% Heating Capacity at -10°C
- Easy installation and maintenance
 - Premium Design
 - Ideal for renovation applications
 - Generates a low noise level (35dB)

EHS Mono R290 (Without Pump)



Indoor Unit				AE200DN*MPK/EU	AE200DN*MPK/EU	AE200DN*MPK/EU	AE200DN*MPK/EU
Outdoor Unit Single Phase				AE050CXYDEK/EU	AE080CXYDEK/EU	AE120CXYDEK/EU	AE160CXYDEK/EU
Outdoor Unit 3 Phase				N.A.	AE80CXYDGK/EU	AE120CXYDGK/EU	AE160CXYDGK/EU
Controller				MIM-E03FN	MIM-E03FN	MIM-E03FN	MIM-E03FN
System							
Operation	Nominal Capacity	Heating A7/W35¹ / A7/W55²	kW	5.0/5.0	8.0/8.0	12.0/12.0	16.0/16.0
		Cooling A35/W18¹	kW	5.0	8.0	12.0	14.0
		COP (Nominal Heating) A7/W35¹ / A7/W55²	W/W	5.10/3.10	4.91/3.00	4.80/3.00	4.51/2.90
		EER (Nominal Cooling) A35/W18¹	W/W	3.91	3.90	4.00	3.80
		SCOP LWT 35°C/ 55°C	W/W	5.00/3.60	4.85/3.55	4.90/3.65	4.70/3.55
		Seasonal Space Heating Eff. Class* LWT 35°C/ 55°C		A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
Tank Integrated Hydro Unit							
Water Tank Volume			litres	200	200	200	200
Sound	Sound Pressure	Heating Std	dB(A)	26/28³	26/28³	28/30³	28/30³
		Cooling Std	dB(A)	26/28³	26/28³	28/30³	28/30³
	Sound Power	Heating Std	dB(A)	40/42³	40/42³	42/44³	42/44³
Dimensions	Net Weight		kg	132 / 142³	132 / 142³	132 / 142³	132 / 142³
	Net Dimensions (WxHxD)		mm	598 x 1,850 x 600	598 x 1,850 x 600	598 x 1,850 x 600	598 x 1,850 x 600
Outdoor Unit							
Sound	Sound Pressure	Heating Std	dB(A)	41	45	47	51
		Cooling Std	dB(A)	41	45	47	51
Dimensions	Net Weight		kg	86	98	140	140
	Net Dimensions (WxHxD)		mm	998 x 850 x 500	998 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530
Refrigerant	Type			R290 (GWP=3)			
Operation							
Ambient Temperature		Heating	°C	-25~35	-25~35	-25~35	-25~35
		Cooling	°C	10~46	10~46	10~46	10~46
		DHW	°C	-25~43	-25~43	-25~43	-25~43

EHS Mono R290 (With Pump)






Outdoor Unit				AE050CXYBEK/EU N.A.	AE080CXYBEK/EU AE080CXYBGK/EU	AE120CXYBEK/EU AE120CXYBGK/EU	AE160CXYBEK/EU AE160CXYBGK/EU
Operation	Nominal Capacity	Heating A7/W35 ¹ / A7/W55 ²	kW	5.0/5.0	8.0/8.0	12.0/12.0	16.0/16.0
		Cooling A35/W18 ¹	kW	5.0	8.0	12.0	14.0
	COP (Nominal Heating) A7/W35 ¹ / A7/W55 ²		W/W	5.00/3.10	4.91/3.00	4.80/3.00	4.51/2.90
	EER (Nominal Cooling) A35/W18 ¹		W/W	3.91	3.90	4.00	3.80
	SCOP LWT 35°C/ 55°C		W/W	5.00/3.60	4.85/3.55	4.90/3.65	4.70/3.55
	Seasonal Space Heating			A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
Sound	Sound Pressure	Heating Std	dB(A)	41	45	47	51
		Cooling Std	dB(A)	41	45	47	51
Dimensions	Net Weight		kg	113	125	154	125
	Net Dimensions (WxHxD)		mm	1270 x 850 x 500	1270 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530
Refrigerant	Type			R290 (GWP=3)			
Operation	Ambient Temperature	Heating	°C	-25~35	-25~35	-25~35	-25~35
		Cooling	°C	10~46	10~46	10~46	10~46
		DHW	°C	-25~43	-25~43	-25~43	-25~43

* A+++ energy label is available according to EU No. 811/2013 label classification 2019, on a scale from D to A+++
¹ A2W Condition : (Heating) Water In/Out 30°C/35°C, Outdoor Air 7°C[DB]/6°C[WB]; (Cooling) Water In/Out 23°C/18°C, Outdoor Air 35°C[DB].
² A2W Condition : (Heating) Water In/Out 47°C/55°C, Outdoor Air 7°C[DB]/6°C[WB].
³ Sound pressure level is obtained in an anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound pressure level may differ depending on operation conditions.

Accessories and controls overview

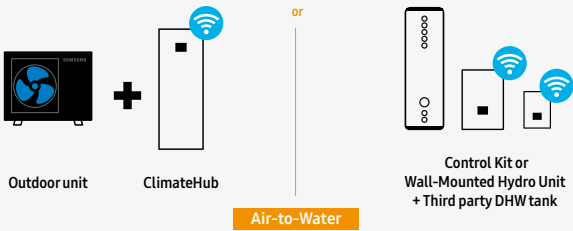
								
Wired Remote Controller	Touch Controller 2.0	Mono Control Kit	DMS2.5 - Centralized Web server	Wi-Fi Kit	External Room Sensor	Backup Heater (3 kW)	Extension wire kit	2-zone Thermistor kit
MWR-WW10*N	MCM-A300BN	MIM-E03FN	MIM-D01AN	MIM-H04EN	MRW-TA	MHC-300FP	MVW-EE300	MOS-T1

		
AE260CNWMEG/EU	AE120CXYDEK/EU	AE160CXYDGK/EU
AE080CXYDEK/EU	AE120CXYDGK/EU	AE160CXYDGK/EU
AE080CXYDGK/EU	MIM-E03FN	MIM-E03FN
MIM-E03FN	MIM-E03FN	MIM-E03FN
8.0/8.0	12.0/12.0	16.0/16.0
8.0	12.0	14.0
4.91/3.00	4.80/3.00	4.51/2.90
3.90	4.00	3.80
4.85/3.55	4.90/3.65	4.70/3.55
A+++ / A++	A+++ / A++	A+++ / A++
260	260	260
26	30	30
26	30	30
40	44	44
140	140	140
595 x 1,800 x 700	595 x 1,800 x 700	595 x 1,800 x 700
45	47	51
45	47	51
98	140	140
998 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530
	R290 (GWP=3)	
-25~35	-25~35	-25~35
10~46	10~46	10~46
-25~43	-25~43	-25~43

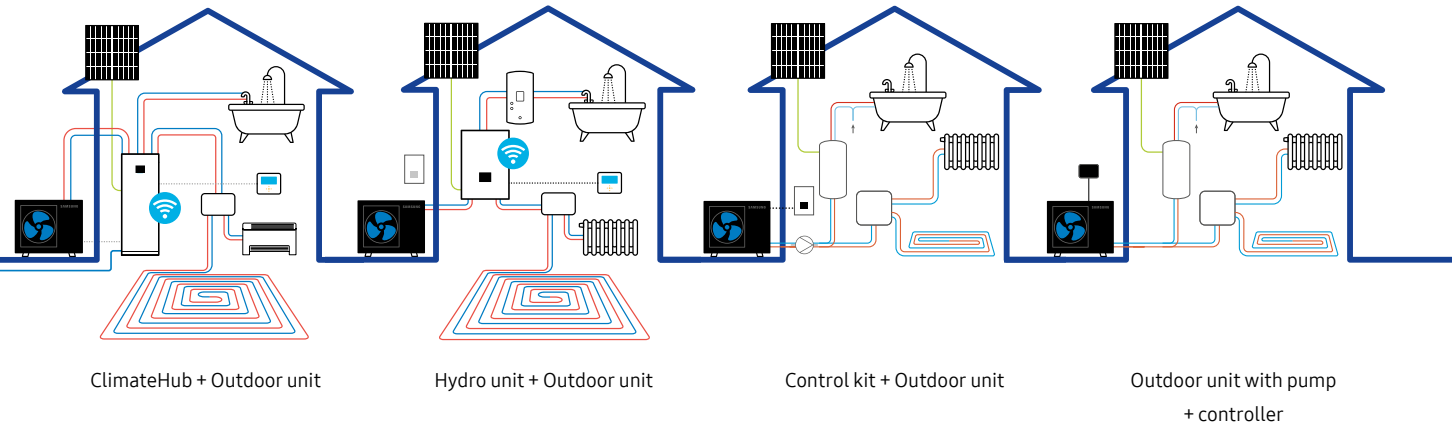
How does it work?

The EHS Mono R290 outdoor unit without a Pump is designed to seamlessly connect with different indoor units, giving you the freedom to choose the solution that fits your home best. While the EHS Mono R290 with Pump has hydraulic components already integrated, and therefore it can work as a stand alone unit for space cooling or heating.

- Pair with ClimateHub: an all-in-one indoor unit that includes a built-in domestic hot water tank (up to 260L) and all necessary hydraulic components — ideal for a clean, compact installation.
- Use with a Hydro Unit: perfect if you already have a domestic hot water tank or want to build a custom solution with other components.
- Connect to the Control Kit: a compact option or tailored installations, where the installer can design the hydraulic components and tank for the installation in such a way that it fits in smaller spaces.



Configurations



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Find your flow.

Learn more about Samsung Climate Solutions at:
samsung-climatesolutions.com

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