Small inverter chiller and heat pump

EWAQ-BA, EWYQ-BA, SEHVX-AAW+SERHQ-AAW1

Superior flexibility and outstanding performance

Why choose Daikin?

Daikin was the first company to pioneer the use of inverters in air cooled screw chillers. And today, our next generation of inverter technology makes both comfort and process cooling even more efficient and cost-effective. With the highest efficiency at both partial and full load, installers and building owners can give end-users better all year round comfort – with lower noise levels and higher energy efficiency than ever before.

Daikin is your best partner for your green building project. We have a team of BREEAM accredited professionals (APs) who will give you the maximum support in earning BREEAM credit and scoring LEED points. We are a BREEAM partner dedicated to delivering sustainable buildings with our inverter chillers which offer the best seasonal efficiency.

Why choose the Daikin small

Flexibility

- ☑ Cooling only and heat pump version available
- ☑ Ideal for comfort and other cooling applications
- ☑ Seven sizes from 16 up to 75 kW
- ☑ Can be combined to serve larger applications efficiently
- ☑ Split version ideal for colder climates
- ☑ Wide range of operating conditions, including brine applications

Reliability

- ☑ Using inverter technology delivers following benefits:
  - › Lower sound levels under partial load
  - › Highly precise chiller water temperatures
  - › Quicker system response to changing load conditions
- ☑ Guaranteed partial cooling back up, even during maintenance
- ☑ Hermetic compressor with proactive control logic
- ☑ All units are factory tested to ensure trouble-free operation
- ☑ Hermetic scroll compressor with increased reliability reduces maintenance

Control

The digital controller allows user-friendly control of the unit's operating parameters. The most important of these are:

- ☑ Weather dependent set point
  - › The controller calculates automatically the space heating set point temperature based on the outdoor temperature
  - › A colder outdoor temperature will result in warmer water and vice versa
- ☑ Automatic setback function
  - › An automatic daily scheduled function that can be activated during the night when the temperature demands are not the same as during the day
- ☑ Master/slave control of up to 16 modules

The control logic provides maximum efficiency and allows the unit to continue operating, even in unusual operating conditions. It also provides a history of the unit's operation.

inverter chiller series?

Comfort

- ☑ Low noise levels thanks to inverter-driven compressor and fans
- ☑ Minimal fluctuation in exiting water temperature, even without a buffer tank
- ☑ Wide range of operating conditions, up to 43°C

EWAQ-BA, EWYQ-BA

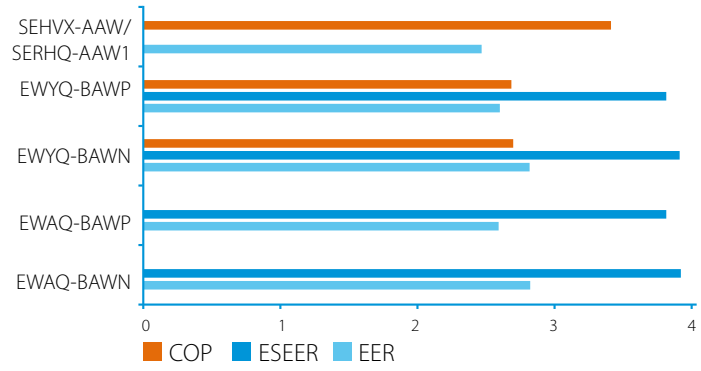
SEHVX-AAW, SERHQ-AAW1

Efficiency

The inverter adjusts both the compressor and fan speeds to match variable-load building demands. This allows the chiller to operate at optimum efficiency. Daikin small inverter chillers have class-leading partial load performance with ESEER ratings of up to 4.33

- ☑ Using only the power needed to match the load:
  - › Reduces annual energy consumption and operating costs
  - › Minimises financial payback of the chilled water system
  - › Reduces the installation's CO_2 emissions
  - › Split versions offer higher efficiency

High efficiencies both at full load and part load



Split units need no glycol,

making them ideal for colder climates

Daikin's small inverter heat pumps also come in a split version (SEHVX-AAW+SERHQ-AAW1) with two separate units: the actual outdoor unit and a factory mounted hydronic indoor module. The hydronic module is installed indoors, eliminating the need for glycol. This is ideal for colder climates as this results in higher efficiency. The compact dimensions and limited pipework mean that the units can be installed in very restricted spaces. The units' small size means that they can fit into a lift.

Installer benefits

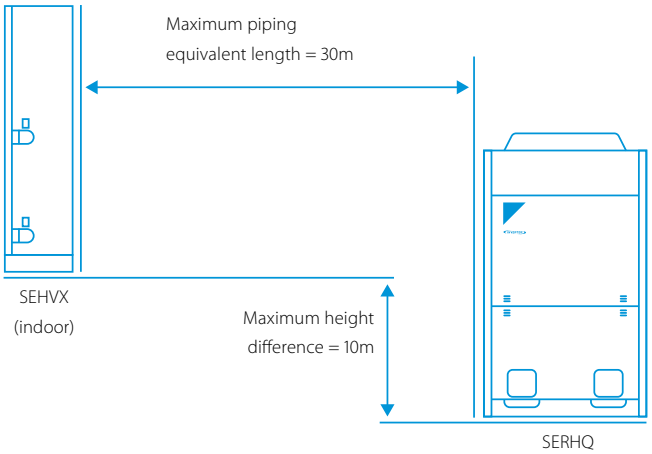
- No need to add glycol as the condenser (in heating mode) is a component of the indoor unit
- Great installation flexibility as you can combine modules on site
- Easy installation, even in restricted spaces
- Ducted installation is possible for the outdoor unit
- Indoor and outdoor units are easy to transport and fit in a lift

Customer benefits

Compared with the packaged version, the split version offers customers the following benefits:

- Higher efficiency in cold climates
- Lower installation cost thanks to easy installation

Flexible installation options with pipe runs of up to 30m between indoor and outdoor units, and a height difference of up to 10m.



Outdoor units have to be placed on the same level

Daikin hardware and software

give you total control

Additional features of BRC21A54 external controller

› Visualisation of negative set point
› Reduction of dead band around set point
› Heating only mode

RTD-W

A modbus gateway (RTD-W) can be installed per unit in order allow the control and monitoring by a Daikin controller or a thirdparty BMS, which will increase further the efficiency of the system.

Heating only mode

In order to qualify for local subsidies in some European countries, the unit can be set to 'heating only' mode.

EKCC-W: Universal centralised control

A master/slave control kit which can control and monitor up to 16 hydroboxes or groups, connected through RTD-W. The sequencing controller allows central control and monitoring of the exact heating and cooling demand of a complete system. It is highly efficient thanks to the energy reducing function of the unit's cascade operation. An entire plant can be operated via a single controller, or even remotely over the Internet.

By combining these products, a centralised control and monitoring system for water based heating/cooling systems can be created.

Tools and platforms

› Our chiller selection software can be ordered via **http://www.daikineurope.com/support-and-manuals/software-downloads/**

› The Daikin E-data app is available for download from for iOS and Android tablets

Available on the App Store

ANDROID APP ON Google play

› Access our business portal via **my.daikin.eu**

Technical specifications

Packaged version

Heating & Cooling				EWYQ-BAWN/BAWP	016	021	025	032	040	050	064
Cooling capacity	Nom.			kW	17.4(1)/16.6(2)	21.7(1)/20.7(2)	25.8(1)/24.7(2)	32.3(1)/30.9(2)	43.4(1)/41.5(2)	51.8(1)/49.7(2)	64.5(1)/62.3(2)
Heating capacity	Nom.			kW	16.2(1)/17.00(2)	20.3(1)/21.30(2)	24.6(1)/25.70(2)	30.7(1)/32.10(2)	40.6(1)/42.50(2)	49.0(1)/51.10(2)	61.5(1)/63.70(2)
Power input	Cooling	Nom.		kW	5.60(1)/5.80(2)	7.25(1)/7.59(2)	9.29(1)/9.74(2)	13.0(1)/13.5(2)	14.7(1)/15.4(2)	18.8(1)/19.7(2)	26.4(1)/27.4(2)
	Heating	Nom.		kW	5.53(1)/5.73(2)	7.10(1)/7.44(2)	8.91(1)/9.36(2)	10.6(1)/11.1(2)	14.0(1)/14.7(2)	17.6(1)/18.5(2)	20.7(1)/21.7(2)
Capacity control	Method				Inverter controlled						
	Minimum capacity			%	25						
EER					3.11(1)/2.86(2)	2.99(1)/2.73(2)	2.78(1)/2.54(2)	2.48(1)/2.29(2)	2.95(1)/2.69(2)	2.76(1)/2.52(2)	2.44(1)/2.27(2)
ESEER					4.33(1)/4.21(2)	4.08(1)/4.18(2)	3.85(1)/4.04(2)	3.39(1)/3.62(2)	4.19(1)/4.24(2)	3.96(1)/4.12(2)	3.64(1)/3.78(2)
COP					2.93(1)/2.97(2)	2.86(1)/2.86(2)	2.76(1)/2.75(2)	2.90(1)/2.89(2)		2.78(1)/2.76(2)	2.97(1)/2.94(2)
Space heating	Average climate water outlet 35°C	General	ηs (Seasonal space heating efficiency)	%	130(1)/133(2)	126(1)/126(2)	130(1)/121(2)	120(1)/119(2)	126(1)/126(2)	138(1)/121(2)	121(1)/119(2)
			SCOP		3.33(1)/3.39(2)	3.22(1)/3.22(2)	3.32(1)/3.09(2)	3.08(1)/3.06(2)	3.22(1)/3.21(2)	3.53(1)/3.08(2)	3.09(1)/3.04(2)
			Seasonal space heating eff. class		A+(1)/A+(2)		A+(1)/A(2)	A(1)/A(2)	A+(1)/A+(2)	A+(1)/A(2)	A(1)/A(2)
Dimensions	Unit	Height		mm	1,684						
		Width		mm	1,370			1,680	2,360		2,980
		Depth		mm	774				780		
Weight	Unit			kg	264	317		397	571		730
	Operation weight			kg	267	320		401	577		738
Water heat exchanger	Type				Brazed plate						
	Water flow rate	Cooling	Nom.	l/min	50.0	62.0	74.0	93.0	124	148	185
		Heating	Nom.	l/min	46.0	58.0	71.0	88.0	116	140	176
	Water pressure drop	Cooling	Total	kPa	20	30	42	30		42	30
	Water volume			l	1.90			2.90	3.80		5.70
Air heat exchanger	Type				Hi-XSS						
Compressor	Type				Hermetically sealed scroll compressor						
	Quantity				1	2		3	4		6
Fan	Type				Axial						
	Quantity				1			2			4
	Air flow rate	Cooling	Nom.	m^3/min	171	185		233	370		466
		Heating	Nom.	m^3/min	171	185		233	370		466
Sound power level	Cooling	Nom.		dBA	78.0			80.0	81.0		83.0
Operation range	Air side	Cooling	Min.~Max.	°CDB	-5~43						
		Heating	Min.~Max.	°CDB	-15~35						
	Water side	Cooling	Min.~Max.	°CDB	-10~20						
		Heating	Min.~Max.	°CDB	25~50						
Refrigerant	Type / GWP				R-410A / 2,087.5						
	Circuits	Quantity			1						
	Control				Electronic expansion valve						
Refrigerant charge	Per circuit			kg	7.6			9.6	15.2		19.2
				TCO_2eq	15.9			20.0	31.7		40.1
Water circuit	Piping			inch	1-1/4"				1-1/2"		
	Piping connections diameter			inch	1-1/4" (female)				2" (female)		
Unit	Starting current	Max		A	0.00	77.7	78.7	88.7	99.8	102	121
	Running current	Max		A	22.2	25.3	26.4	35.2	47.4	49.6	67.2
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/400						

(1) EWYQ-BAWN: Version without pump (2) EWYQ-BAWP: Version with pump (3) Cooling capacity, power input and EER: Condition: Ta 35°C - LWE 7°C (DT = 5°C) (4) Heating capacity, power input and EER: Condition: Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)
(5) Contains fluorinated greenhouse gases

Split version

Heating & Cooling					SEHVX20AAW/ SERHQ020AAW1	SEHVX32AAW/ SERHQ032AAW1	SEHVX40AAW/ SERHQ020AAW1+SERHQ020AAW1	SEHVX64AAW/ SERHQ032AAW1+SERHQ032AAW1
Cooling capacity	Nom.			kW	20.7	30.9	41.5	62.3
Heating capacity	Nom.			kW	21.3 (1)/ 21.3 (2)	32.1 (1)/ 32.1 (2)	42.5 (1)/ 42.5 (2)	63.7 (1)/ 63.7(2)
Power input	Cooling	Nom.		kW	7.59	13.5	15.4	27.4
	Heating	Nom.		kW	6.12 (1)/ 7.44 (2)	8.72 (1)/ 11.1 (2)	12.0 (1)/ 14.7 (2)	16.9 (1)/ 21.7 (2)
EER					2.73	2.29	2.69	2.27
COP					3.48 (1)/2.86 (2)	3.68 (1)/ 2.89 (2)	3.54 (1)/ 2.89 (2)	3.77 (1)/ 2.94 (2)
Space heating	Average climate water outlet 35°C	General	SCOP		3.22	3.06	3.22	3.05
			ηs (Seasonal space heating efficiency)	%	126	119	126	120
			Seasonal space heating eff. class		A+	A	A+	A

Unit for indoor installation				SEHVX-AAW	SEHVX20AAW	SEHVX32AAW	SEHVX40AAW	SEHVX64AAW
Dimensions	Unit	Height		mm	1,573			
		Width		mm	766			
		Depth		mm	396			
Weight	Unit			kg	60	62	64	66
	Packed unit			kg	70	72	74	76
Sound power level	Nom.			dBA	63		66	
Operation range	Heating	Ambient	Min.~Max.	°C~°CDB	-15~35			
		Water side	Min.~Max.	°C	25~50			
	Indoor installation	Ambient	Min.	°CDB	5			
			Max.	°CDB	35			
	Cooling	Ambient	Min.~Max.	°CDB	-5~43			
		Water side	Min.~Max.	°C	5~20			
Refrigerant	Type / GWP				R-410A / 2,087.5			
	Circuits	Quantity			1			
	Control				Electronic expansion valve			
Water circuit	Piping connections diameter			inch	G 1"1/4 (female)		G 2" (female)	
	Piping			inch	1-1/4"		1-1/2"	
	Water pressure drop	Cooling	Nom.	kPa	176	151	231	141
		Heating	Nom.	kPa	174	149	229	139
	Total water volume			l	3.2	4.2	5.8	7.7
Water side Heat exchanger	Type				Brazed plate			
	Water volume			l	1.9	2.9	3.8	5.7
	Water flow rate	Heating	Nom.	l/min	61	92	122	183
		Cooling	Nom.	l/min	59	89	119	179
Current	Maximum running current	Cooling		A	5.54	5.64	7.24	
		Heating		A	5.54	5.64	7.24	
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/400			

Outdoor Unit				SERHQ-AAW1	SERHQ020AAW1	SERHQ032AAW1
Dimensions	Unit	Height		mm	1,680	
		Width		mm	930	1,240
		Depth		mm	765	
Weight	Unit			kg	240.00	316.00
	Packed unit			kg	273.00	355.95
Compressor	Quantity				2	3
	Type				Hermetically sealed scroll compressor	
Fan	Type				Propeller fan	
	Quantity				1	2
	Air flow rate	Cooling	Nom.	m^3/min	185	233
		Heating	Nom.	m^3/min	185	233

(1) Heating Ta DB/WB 7/6°C - LWC 35°C (DT=5°C) (2) Heating Ta DB/WB 7/6°C - LWC 45°C (3) Cooling: Ta 35°C - LWE 7°C (DT = 5°C) (4) It functioning relies on fluorinated greenhouse gases

INDOOR INSTALLATION OF HYDRONIC MODULES OF THE SPLIT VERSION

The highest efficiency at both partial and full load delivers better results all year round, with lower noise levels and higher energy efficiency than ever before for small to medium applications.

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