DAIKIN

altherma

Daikin Altherma 3 M

Product catalogue 2020
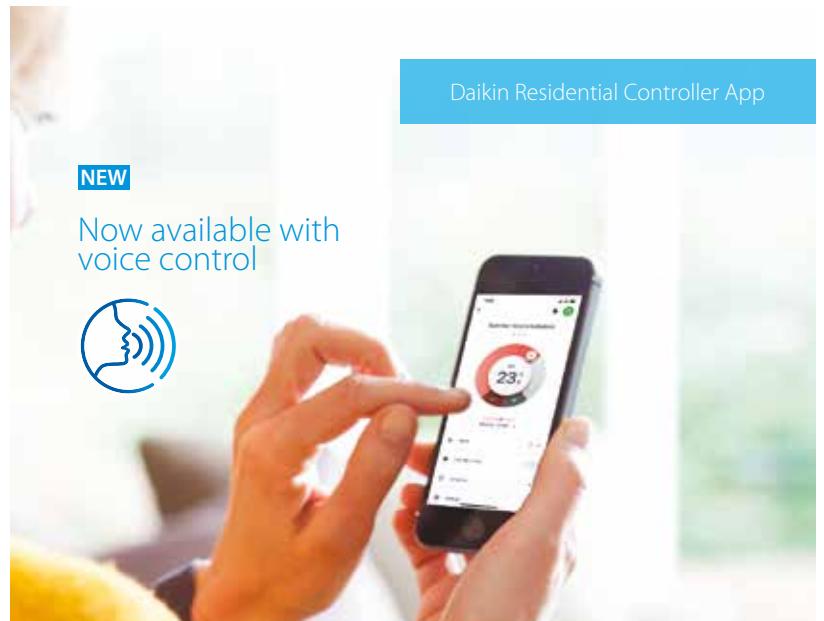
The power pact

E(B/D)LA-D series

Daikin Altherma 3 M
Ideal for renovations

Daikin Residential Controller App

NEW

Now available with
voice control

Daikin Altherma 3 M
Suitable for new buildings

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Daikin Altherma 3 M

The power pact

**The Daikin Altherma 3 M is Daikin's first third-generation monobloc.
This new edition features a brand-new design and runs on refrigerant R-32.**

Improved compact design

A redesigned casing

A black horizontal front grille hides the single fan,
reducing the perception of sound produced by the unit.

The light grey casing reflects the installation space to help
the unit blend into any environment.

A single fan for
high-capacity units

Daikin engineers replaced the double fan with one
larger fan and optimised its shape to lower the
operational sound and improve air circulation.

1,378 mm
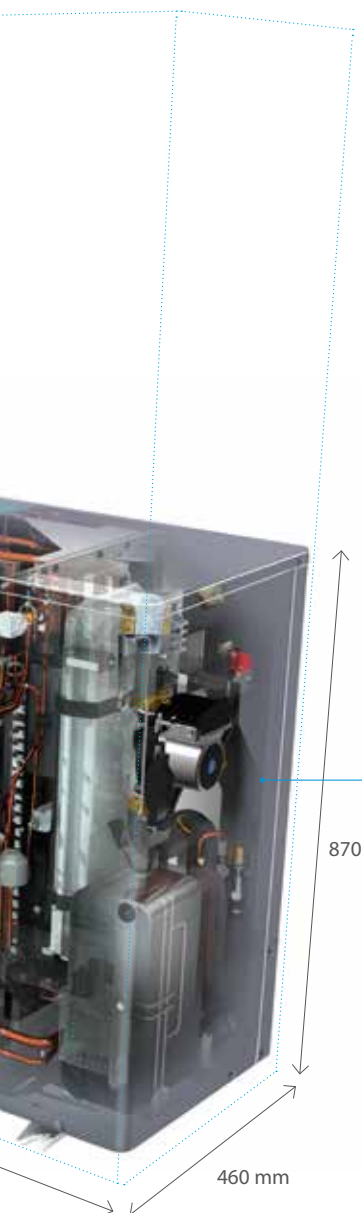
Monobloc running on refrigerant R-32

Daikin is a pioneer in launching heat pumps equipped with R-32. With a lower Global Warming Potential (GWP), the R-32 is equivalent in power to standard refrigerants, but achieves higher energy efficiency and lower CO_2 emissions. Easy to recover and reuse, R-32 is the perfect solution for attaining the new European CO_2 emission targets.

Reduced environmental impact: CO_2eq > 75% reduction
› GWP: R410A: 2,088 > R32: 675
› 30% less refrigerant charge needed

Global Warming Potential (GWP)	Charge Volume (kg)	CO_2 eq (kg x GWP)
2,088	100%	2,088
675	70%	473
R-410A R32	R-410A R32	R-410A R32

X   =   75%

R-32   BLUEVOLUTION

870 mm

460 mm
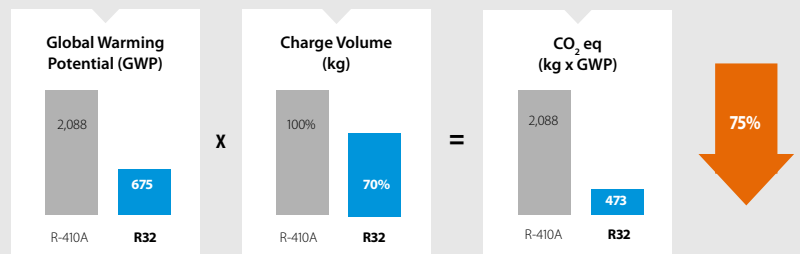
Ideal for small spaces

The monobloc is the ideal solution for places that have limitations on space. No additional indoor unit is required, and the monobloc can fit right under a window to save outdoor space.

Fully connected

The Daikin Altherma 3 M finds its power in
Daikin Altherma total solution, including controls,
heat collectors and heat emitters.

Daikin Residential Controller App, with voice control

› Control the heating system from home or remotely
   via smartphone
› Control the heating system with voice commands
› Integrate with Google Assistant and Amazon Alexa
› Other features include:
   - Scheduling for daily use or holiday mode
   - Controlling multiple units/performance boosting
   - Monitoring energy consumption

Cloud ready with WLAN option

Madoka: a user-friendly wired room thermostat

› Sleek and elegant design
› Intuitive touch button control
› Three colours to match any interior (white, black and silver-grey)
› Compact unit measuring only 85 x 85 mm

iF DESIGN AWARD 2018

reddot award 2018 winner

Heating and cooling emitters

As a mid-temperature heat pump, the Daikin
Altherma 3 M works perfectly with various emitters,
including fan coils, underfloor heating and heat
pump convectors.

Man-Machine Interface (MMI)

Inspired by the award-winning design of the Daikin Altherma 3 indoor units, Daikin also upgraded this controller to deliver an even more user-friendly interface.

☑ **Quick configuration**

After logging in, you'll be able to configure the unit with the new controller in less than 10 steps. You can even check if the unit is ready to use by running test cycles.

☑ **Easy operation**

The new interface features a few buttons and 2 navigational knobs to help you quickly set the room temperature and control units.

☑ **User-friendly design**

The interface features an intuitive design. The high contrasted colour screen delivers stunning and practical visuals for both installers and service engineers.

☑ WLAN cartridge connection

☑ Small dimensions for a discreet unit: 136 x 160 x 37 mm (HxWxD)

Domestic hot water production

The monobloc combines with stainless steel tanks (EKHWS-D), thermal stores and panels (EKHWP) to provide domestic hot water quickly.

Straightforward installation & maintenance

The Daikin Altherma 3 M attains its power from within by combining all the hydraulic components into one unit.

Expansion vessel

Switch box (incl hydro PCB)

Water pressure sensor

Optional: Back-up heater EKLBUHCB6W (can be rewired to 3V/6V/9W)

Pump

Plate heat exchanger

Water filter in stop valve

Flow sensor
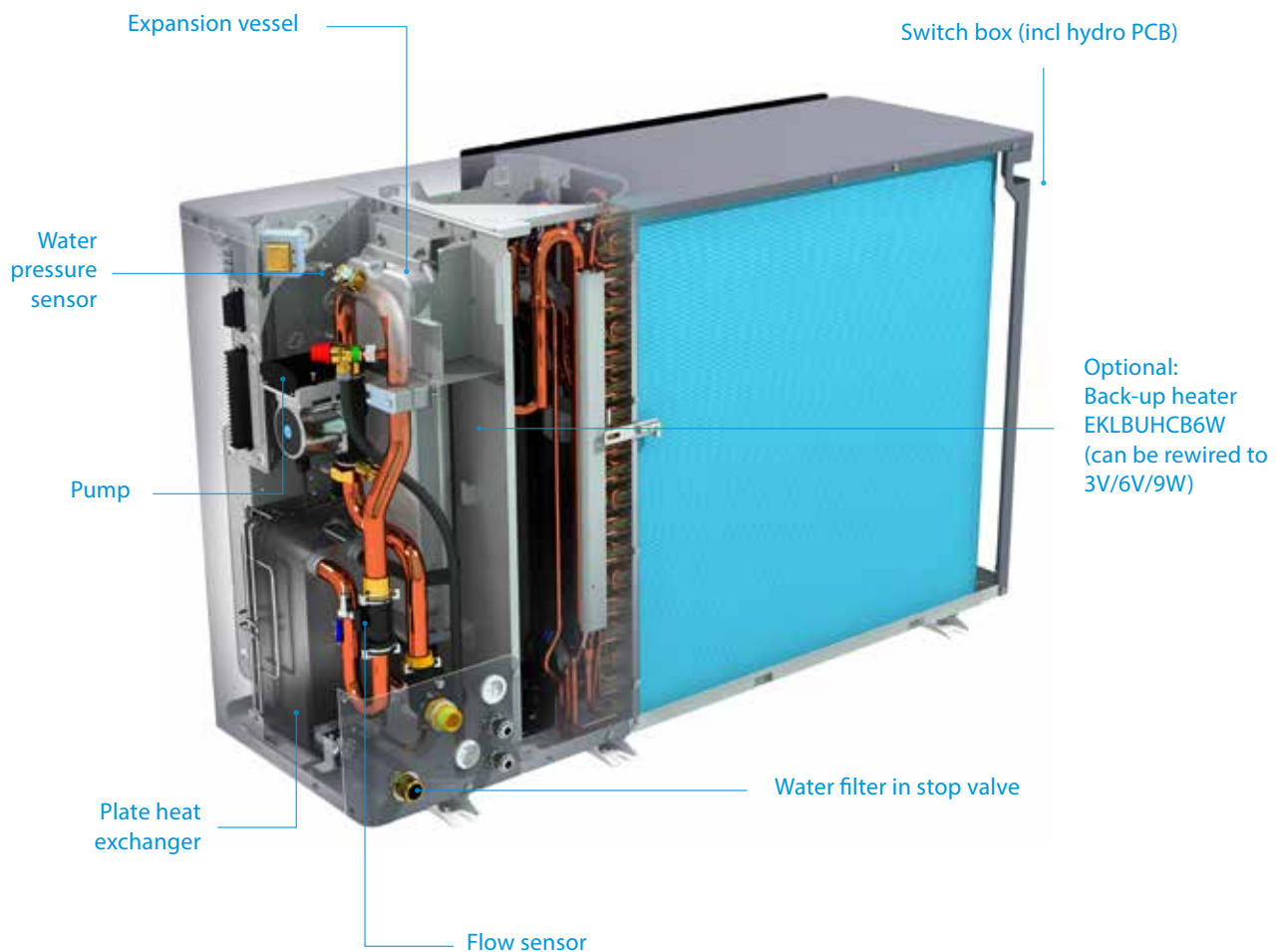
Hydraulic components included:

› Circulation pump
› Expansion vessel
› Minimal wiring

Refrigerant circuit in the unit

› No refrigerant connection inside the house
› Only requires water pipe connections at the rear

Comfort and premium performance

The Daikin Altherma 3 M offers enhanced performance and a broad product lineup.

Extended product range

› Heating only models (EDLA*)
› Reversible models providing cooling (EBLA*)
› One-phase models (EB/DLA-DV*)
› Three-phase models (EB/DLA-DW*)
› Back-up heater models (EB/DLA-D3V/D3W)
› Back-up heater less models (EB/DLA-D/DW)
› All available in 9, 11, 14 and 16 kW

Improved performance

› Up to **A⁺⁺⁺**
› Operation down to -25 °C outdoor temperature
› Guaranteed heating capacities down to -20 °C
› Delivers LWT 60 °C at -7 °C
› Suitable for renovations, replacement,
  and large new buildings

Flexibility in domestic hot water production

Combinable with stainless steel domestic hot water tank (EKHWS(U)-D or ECH2O thermal store) to get domestic hot water with support from the sun.

Perfect match with any heat emitter

Combine with underfloor heating applications or with Daikin Altherma HPC heat pump convectors.

DAIKIN altherma   BLUEVOLUTION

Daikin Altherma 3 M

Air-to-water monobloc system that provides **heating only** and is ideal for indoor spaces that have limited room

› WLAN cartridge connection (optional)
› Possible to combine with domestic hot water tanks
› Heating only air-to-water heat pump
› Monobloc all-in-one concept including all hydraulic parts
› An optional built-in 3 kW electric back-up heater or a separate back-up heater kit are available for additional heating
› Available in one phase and three phase

-25°

EDLA09-16DV3/DW1

BRC1HHDK

Up to A+++   60 °C   R-32
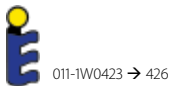
011-1W0423 → 426

Single Unit			EDLA	09D(3)V3/D(3)W1	11D(3)V3/D(3)W1	14D(3)V3/D(3)W1	16D(3)V3/D(3)W1
Heating capacity	Nom.		kW	9.37 (1) / 9.00 (2)	10.6 (1) / 9.82 (2)	12.0 (1) / 12.5 (2)	16.0 (1) / 16.0 (2)
Power input	Heating	Nom.	kW	1.91 (1) / 2.43 (2)	2.18 (1) / 2.68 (2)	2.46 (1) / 3.42 (2)	3.53 (1) / 4.56 (2)
COP				4.91 (1) / 3.71 (2)	4.83 (1) / 3.66 (2)	4.87 (1) / 3.64 (2)	4.53 (1) / 3.51 (2)
Space heating	Average climate water outlet 55 °C	General	ηs (Seasonal space heating efficiency)	133	130	132	130
			SCOP	3.39	3.32	3.37	3.33
			Seasonal space heating eff. class	A++			
	Average climate water outlet 35 °C	General	ηs (Seasonal space heating efficiency)	186		182	
			SCOP	4.72	4.64	4.62	
			Seasonal space heating eff. class	A+++			
Casing	Colour			Silver			
	Material			Polyester painted galvanised steel plate			
Dimensions	Unit	HeightxWidthxDepth	mm	870 x 1,380 x 460			
Weight	Unit		kg	DV3/DW1: 147, D3V3/D3W1: 149			
Compressor	Quantity			1			
	Type			Hermetically sealed swing compressor			
Operation range	Heating	Ambient	Min.~Max.	°CWB	DV3/DW1: -25 ~ 25, D3V3/D3W1: -25 ~ 35		
		Water side	Min.~Max.	°C	DV3/DW1: 9 ~ 60, D3V3/D3W1: 15 ~ 60		
Operation range	Domestic hot water	Ambient	Min.~Max.	°CDB	-25 ~ 35		
		Water side	Min.~Max.	°C	25 ~ 55		
Refrigerant	Type			R-32			
	GWP			675.0			
	Charge		kg	3.80			
	Charge		TCO2Eq	2.57			
	Control			Expansion valve			
Sound power level (3)	Heating	Nom.	dBA	62			
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230 - W1/3~/50/400			
Current	Recommended fuses		A	32/16			

(1) Ta DB/WB 7 °C/6 °C - LWC 35 °C (DT = 5 °C) | (2) Ta DB/WB 7 °C/6 °C - LWC 45 °C (DT = 5 °C) | (3) According to EN14825 This product contains fluorinated greenhouse gases.

Daikin Altherma 3 M

Reversible air-to-water monobloc system that provides **heating and cooling**, and is ideal for indoor spaces that have limited room

› WLAN cartridge connection (optional)
› Possible to combine with domestic hot water tanks
› Heating and cooling air-to-water heat pump
› Monobloc all-in-one concept including all hydraulic parts
› An optional built-in 3 kW electric back-up heater or a separate back-up heater kit are available for additional heating
› Available in one phase and three phase

EBLA09-16DV3/DW1

BRC1HHDW

Up to A+++   60 ℃   R-32

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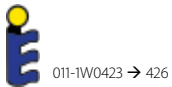
Single Unit			EBLA	09D(3)V3/D(3)W1	11D(3)V3/D(3)W1	14D(3)V3/D(3)W1	16D(3)V3/D(3)W1
Heating capacity	Nom.		kW	9.37 (1) / 9.00 (2)	10.6 (1) / 9.82 (2)	12.0 (1) / 12.5 (2)	16.0 (1) / 16.0 (2)
Power input	Heating	Nom.	kW	1.91 (1) / 2.43 (2)	2.18 (1) / 2.68 (2)	2.46 (1) / 3.42 (2)	3.53 (1) / 4.56 (2)
COP				4.91 (1) / 3.71 (2)	4.83 (1) / 3.66 (2)	4.87 (1) / 3.64 (2)	4.53 (1) / 3.51 (2)
Cooling capacity	Nom.		kW	9.35 (3) / 9.10 (4)	11.6 (3) / 11.5 (4)	12.8 (3) / 12.7 (4)	14.0 (3) / 15.3 (4)
Power input	Cooling	Nom.	kW	2.79 (3) / 1.71 (4)	3.56 (3) / 2.17 (4)	4.06 (3) / 2.51 (4)	4.58 (3) / 3.24 (4)
EER				3.35 (3) / 5.34 (4)	3.26 (3) / 5.31 (4)	3.16 (3) / 5.04 (4)	3.06 (3) / 4.74 (4)
SEER				5.62 (5)	5.79 (5)	5.71 (5)	5.59 (5)
Space heating	Average climate water outlet 55 ℃	General	ηs (Seasonal space heating efficiency)	135	132	134	132
			SCOP	3.44	3.37	3.42	3.37
			Seasonal space heating eff. class	A++			
	Average climate water outlet 35 ℃	General	ηs (Seasonal space heating efficiency)	190	186	185	
			SCOP	4.82	4.73	4.70	4.69
			Seasonal space heating eff. class	A+++			
Casing	Colour			Silver			
	Material			Polyester painted galvanised steel plate			
Dimensions	Unit	HeightxWidthxDepth	mm	870 x 1,380 x 460			
Weight	Unit		kg	DV3/DW1: 147, D3V3/D3W1: 149			
Compressor	Quantity			1			
	Type			Hermetically sealed swing compressor			
Operation range	Heating	Ambient	Min.~Max.	℃WB	DV3/DW1: -25 ~ 25, D3V3/D3W1: -25 ~ 35		
		Water side	Min.~Max.	℃	DV3/DW1: 9 ~ 60, D3V3/D3W1: 15 ~ 60		
Operation range	Cooling	Ambient	Min.~Max.	℃DB	10 ~ 43		
		Water side	Min.~Max.	℃	5 ~ 22		
Operation range	Domestic hot water	Ambient	Min.~Max.	℃DB	-25 ~ 35		
		Water side	Min.~Max.	℃	25 ~ 55		
Refrigerant	Type			R-32			
	GWP			675.0			
	Charge		kg	3.80			
	Charge		TCO2Eq	2.57			
	Control			Expansion valve			
Sound power level (5)	Heating	Nom.	dBA	62			
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230 - W1/3~/50/400			
Current	Recommended fuses		A	32/16			

(1) Ta DB/WB 7 ℃/6 ℃ - LWC 35 ℃ (DT = 5 ℃) | (2) Ta DB/WB 7 ℃/6 ℃ - LWC 45 ℃ (DT = 5 ℃) | (3) Cooling: EW 12 ℃; LW 7 ℃; ambient conditions: 35 ℃DB | (4) Cooling: EW 23 ℃; LW 18 ℃; ambient conditions: 35 ℃DB | (5) According to EN14825. This product contains fluorinated greenhouse gases.

Options

			NO BUH		BUH	
			H/O	REV	H/O	REV
Type		Material name	EDLA-DV3/W1	EBLA-DV3/W1	EBLA-D3V3/3W1	EBLA-D3V3/3W1
Controllers						
	Madoka, remote room thermostat	BRC1HHDW/S/K	●	●	●	●
	WLAN cartridge	BRP069A78	●	●	●	●
	Room thermostat (wired)	EKRTWA	●	●	●	●
	Room thermostat (wireless)	EKRTR1	●	●	●	●
	External sensor	EKRTETS	●	●	●	●
Adapters						
	Demand PCB	EKRP1AHTA	●	●	●	●
	Digital I/O PCB	EKRP1HBAA	●	●	●	●
Installation						
	Bi-Zone kit (watts kit)	BZKA7V3	●	●	●	●
	Anti-freeze valve	AFVALVE1	●	●	●	●
	Flow switch	EKFLSW1	●[1]	●[1]	●[1]	●[1]
	Bypass kit	EKMBHBP1		●		
	BUH-kit	EKLBUHCB6W	●	●		
	Third party tank kit	EKHY3PART	●[2]	●[2]	●[2]	●[2]
	Third party tank kit	EKHY3PART2	●[3]	●[3]	●[3]	●[3]
Sensors						
	Remote indoor sensor	KRCS01-1	●	●	●	●
	Remote outdoor sensor	EKRSCA-1	●	●	●	●
Others						
	PC USB cable	EKPCCAB4	●	●	●	●

(1) Mandatory when glycol is used.
(2) To use when thermistor can be inserted in the tank.
(3) To use when thermistor cannot be inserted in the tank.
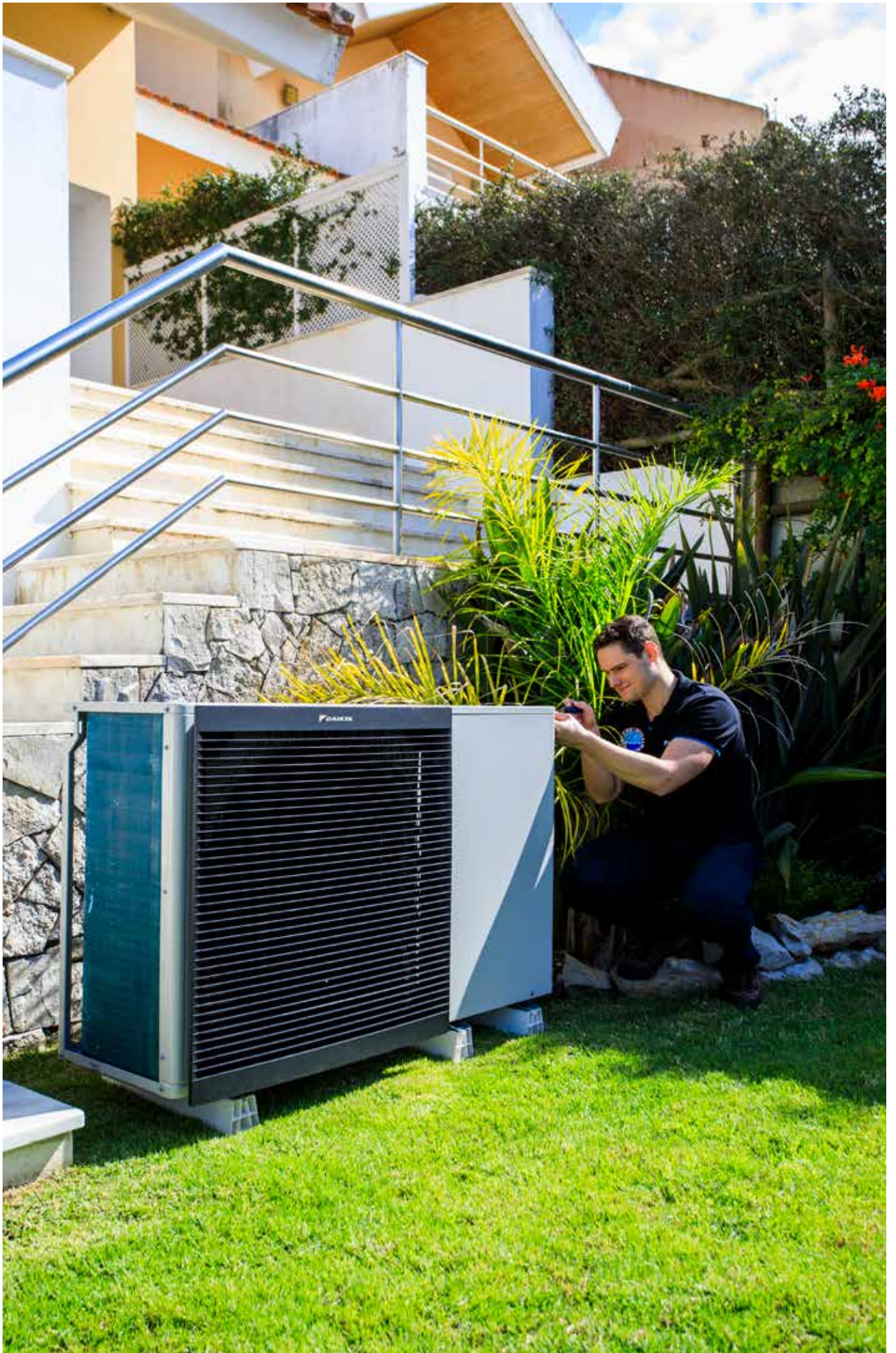
Thermal stores and tanks

Hot water heating installation solutions

Why choose a Daikin Altherma ST thermal store or domestic hot water tank?

Whether your customer only needs hot water or is interested in using solar technologies, Daikin offers a range of reliable solutions that use energy more efficiently and provide maximum comfort.

Thermal store

Stainless steel tank

Domestic hot water tank

Stainless steel tanks

Comfort

› Available in 150, 180, 200, 250 and 300 litres in stainless steel EKHWS(U)-D

Efficiency

› High-quality insulation keeps heat loss to a minimum
› Efficient temperature heating: from 10 °C to 50 °C in only 60 minutes
› Available as an integrated solution or separate tank

Reliability

› At necessary intervals, the unit can heat up water up to 60 °C to prevent the risk of bacteria growth

✓ The ECH$_2$O thermal store range

ECH$_2$O thermal store: additional hot water comfort

Combine your monobloc with a thermal store to achieve the ultimate comfort at home.

› Fresh water principle: receive domestic hot water on demand while eliminating the risk of contamination and sedimentation
› Optimal domestic hot water performance: the low temperature evolution enables high tapping performance
› Fit for the future: possible to combine with renewable solar energy and other heat sources, e.g. fireplace
› Lightweight and robust build of the unit combined with the cascade principle offers flexible installation options

Built for small and large homes, customers can choose between a pressureless and a pressurised hot water system.

Efficiency

› Fit for the future: maximise renewable energy sources
› Intelligent Heat Storage Management: ensures continuous heating during defrost mode, and uses stored heat for space heating
› High-quality insulation keeps heat loss to a minimum

Reliability

› Maintenance-free tank: no corrosion, anode, scale or lime deposits, and no water loss through the safety valve
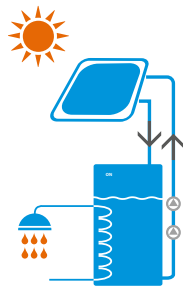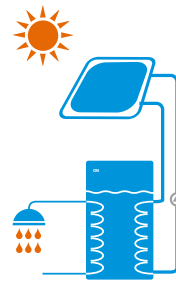
Drain-back solar system   Pressurised solar system

Pressureless (drain-back) solar system

› The solar collectors are only filled with water when sufficient heating is provided by the sun
› The pumps in the control and pump unit switch on briefly and fill the collectors with storage tank water
› After filling, water circulation is maintained by the remaining pump

Pressurised solar system

› System is filled with heat transfer fluid with the correct amount of antifreeze to avoid freezing in winter
› System is pressurised and sealed

Monthly energy consumption of an average detached house

kWh
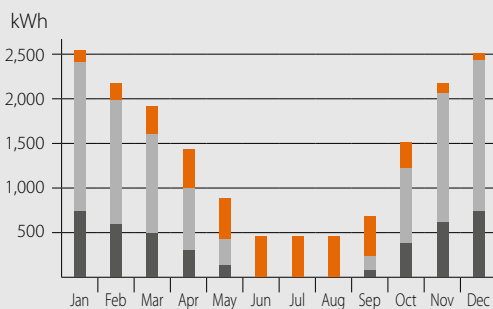
■ Utilisation of solar energy for domestic hot water and central heating
■ Heat pump (environmental heat)
■ Auxiliary energy (electricity)

System diagram: Integrated solar unit

1 Use of solar energy for domestic hot water and central heating
2 External heat pump unit
3 Solar thermal collectors
4 Solar pump station
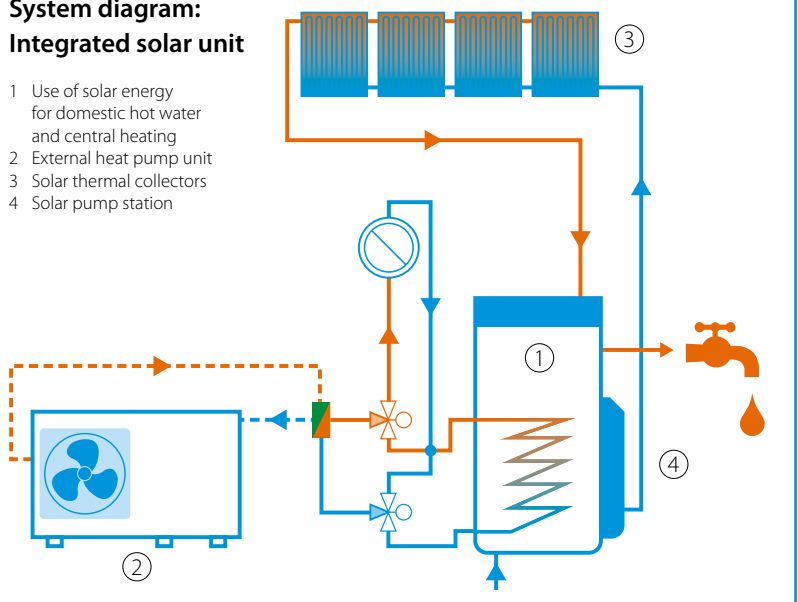
Daikin Altherma ST
Thermal store

DAIKIN
altherma

Plastic domestic **hot water tank with solar support**

› The thermal store EKHWP* is designed to work with Daikin Altherma heat pumps
› Fresh water principle: receive domestic hot water on demand while eliminating the risk of contamination and sedimentation
› Optimal domestic hot water performance: the low temperature evolution enables high tapping performance
› Fit for the future: possible to combine with renewable solar energy and other heat sources, e.g. fireplace
› Lightweight and robust build of the unit combined with the cascade principle offers flexible installation options
› Available in 300 and 500 litres

EKHWP500B   EKHWP300B

B   85 °C

| Accessory			EKHWP	300B	500B	300PB	500PB	54419B
Casing	Colour			Traffic white (RAL9016) / Dark grey (RAL7011)				
	Material			Impact resistant polypropylene				
Dimensions	Unit	Width	mm	595	790	595	790	
		Depth	mm	615	790	615	790	
		Height	mm	1,646	1,658	1,646	1,658	
Weight	Unit	Empty	kg	53	76	56	82	71
Tank	Water volume		l	294	477	294	477	
	Material			Polypropylene				
	Maximum water temperature		°C	85				
	Insulation	Heat loss	kWh/24h	1.5	1.7	1.5	1.7	
	Energy efficiency class			B				
	Standing heat loss		W	64	72	64	72	
	Storage volume		l	290	393	290	393	
Heat exchanger	Domestic hot water	Quantity		1				
		Tube material		Stainless steel (DIN 1.4404)				
		Face area	m²	5.6	5.8	5.6	5.9	5.8
		Internal coil volume	l	27.8	28.9	27.8	29	28.9
		Operating pressure	bar	6				
	Charging	Quantity		1				
		Tube material		Stainless steel (DIN 1.4404)				
		Face area	m²	2.66	3.7	2.66	3.7	1.95
		Internal coil volume	l	12.9	18.1	12.9	18.1	10
		Operating pressure	bar	3				
	Auxiliary solar heating	Tube material		-	Stainless steel (DIN 1.4404)	-	Stainless steel (DIN 1.4404)	
		Face area	m²	-	0.76	-	0.76	
		Internal coil volume	l	-	3.9	-	3.9	
		Operating pressure	bar	-	3	-	3	

Domestic hot water tank

Stainless steel domestic **hot water** tank

› EKHWS(U)-D: available in 150, 180, 200, 250 and 300 litres
  in stainless steel

EKHWS(U)-D

🚰 **B** ➡ **75 °C**

Accessory				EKHWS(U)	150D3V3	180D3V3	200D3V3	250D3V3	300D3V3
Casing	Colour				Neutral white				
	Material				Epoxy coated steel / Epoxy-coated mild steel				
Dimensions	Unit	Height	Tank	mm	1,000	1,164	1,264	1,535	1,745
Weight	Unit	Empty		kg	45	50	53	58	63
Tank	Water volume			l	145	174	192	242	292
	Material				Stainless steel (EN 1.4521)				
	Maximum water temperature			°C	75				
	Insulation	Heat loss		kWh/24h	1.1	1.2	1.3	1.4	1.6
	Energy efficiency class				B				
	Standing heat loss			W	45	50	55	60	68
	Storage volume			l	145	174	192	242	292
Heat exchanger	Domestic hot water	Quantity			1				
		Tube material			Stainless steel (EN 1.4521)				
		Face area		m²	1.050	1.400	1.800		
		Internal coil volume		l	4.9	6.5	8.2		
		Operating pressure		bar	10				
Booster heater	Capacity			kW	3				
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50/230				

17

Madoka

The beauty of simplicity

Silver
RAL 9006 (metallic)
BRC1HHDS

Black
RAL 9005 (matte)
BRC1HHDK

White
RAL9003 (glossy)
BRC1HHDW

User-friendly wired remote controller with premium design

Madoka combines refinement and simplicity

☑ Sleek and elegant design

☑ Intuitive touch button control

☑ Three colours to match any interior

☑ Compact unit measuring only 85 x 85 mm

reddot award 2018
winner

iF DESIGN AWARD 2018

Madoka wired remote controller for Daikin Altherma 3 heat pumps

A new generation of user interface, redesigned and intuitive

BRC1HHDW   BRC1HHDS   BRC1HHDK

Intuitive control with a premium design

The smooth curves of the Madoka controller offer a sleek, refined shape which is distinguished by its striking blue circular display. Presenting a clear visual reference with large easy to read numbers, the controller features are accessed through three touch buttons, which combine intuitive control with easy adjustability for an enhanced user experience.

Three colours to match any interior design

No matter your interior design, Madoka will match it. Silver gives an additional touch to stand out in any interior or application, while Black is an ideal match for darker, stylish interiors. White offers a sleek, modern look.

Easily set operation parameters

Setting and finetuning your controller is simple and helps you attain higher energy savings and more comfort. The system enables you to select the space operation mode (heating, cooling or automatic), set the desired room temperature and control the domestic hot water temperature.

Easy update via Bluetooth

Using the latest software for the Madoka is strongly recommended. To update the software or check if updates are available, you'll need a mobile device and the Madoka Assistant App. This app is available on Google Play and the Apple Store.

www.daikin.eu/madoka

Daikin Residential Controller App

Now available with voice control

The Daikin Residential Controller App is for those who live their life on the go and who want to manage their heating system from their smartphone.
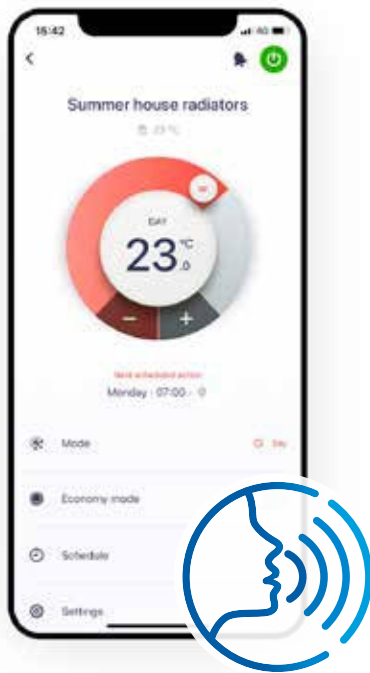
NEW

Voice control

To provide even more comfort and ease, the Daikin Residential Controller App now offers voice control. This hands-free feature cuts down on clicks to manage units faster than ever before.

Cross-functional and multilingual, voice control pairs well with any smart device, including Google Assistant and Amazon Alexa.

works with the Google Assistant   amazon alexa

Set the living room temperature to 21 degrees

Allright, setting the living room to 21 degrees
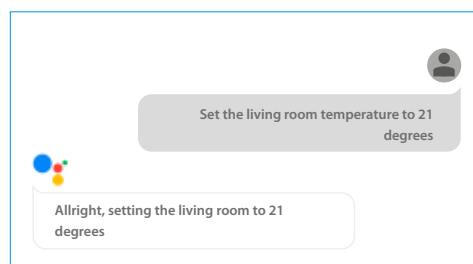
Example of using the voice control via Google Assistant

"Alexa, set the room temperature on 20 °C"

"The room temperature is set on 20 °C"
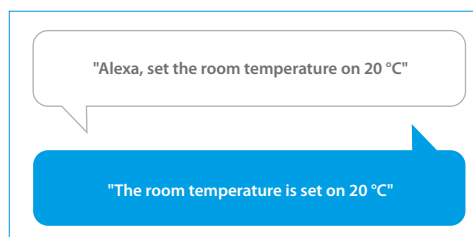
Example of using the voice control via Amazon Alexa

Schedule

Set up a programme outlining when the system should operate, and create up to six actions per day.

☑ Schedule room temperature and operation mode
☑ Enable holiday mode to save costs
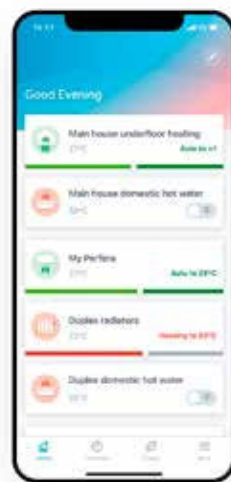
Control

Customise the system to fit your lifestyle and year-round comfort levels.

☑ Change room and domestic hot water temperature
☑ Turn on powerful mode to boost hot water production
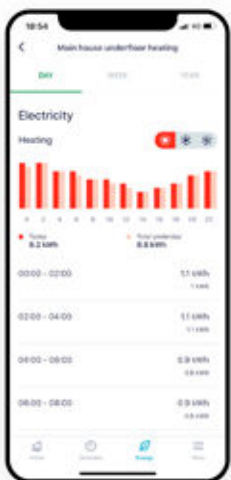
Monitor

Receive a thorough overview of how the system is performing and how much energy it consumes.

☑ Check the status of the heating system
☑ Access energy consumption graphs (day, week, month)

Function availability depends on the system type, configuration and operation mode.
The app functionality is only available if both the Daikin system and the app have a reliable internet connection.

Scan the QR code to download the app now

Cloud connectivity

Customers can control their unit from anywhere with the Daikin Residential Controller App. This app is available via the cloud and delivers the best comfort for space heating, cooling and domestic hot water.

How it works

Residential cloud

Daikin Residential
Controller
Remote control

Modem

Daikin Residential
Controller
Home control

Daikin Altherma 3 M

NEW
WLAN cartridge BRP069A78
Installed inside the unit
(MMI2 SD card slot)
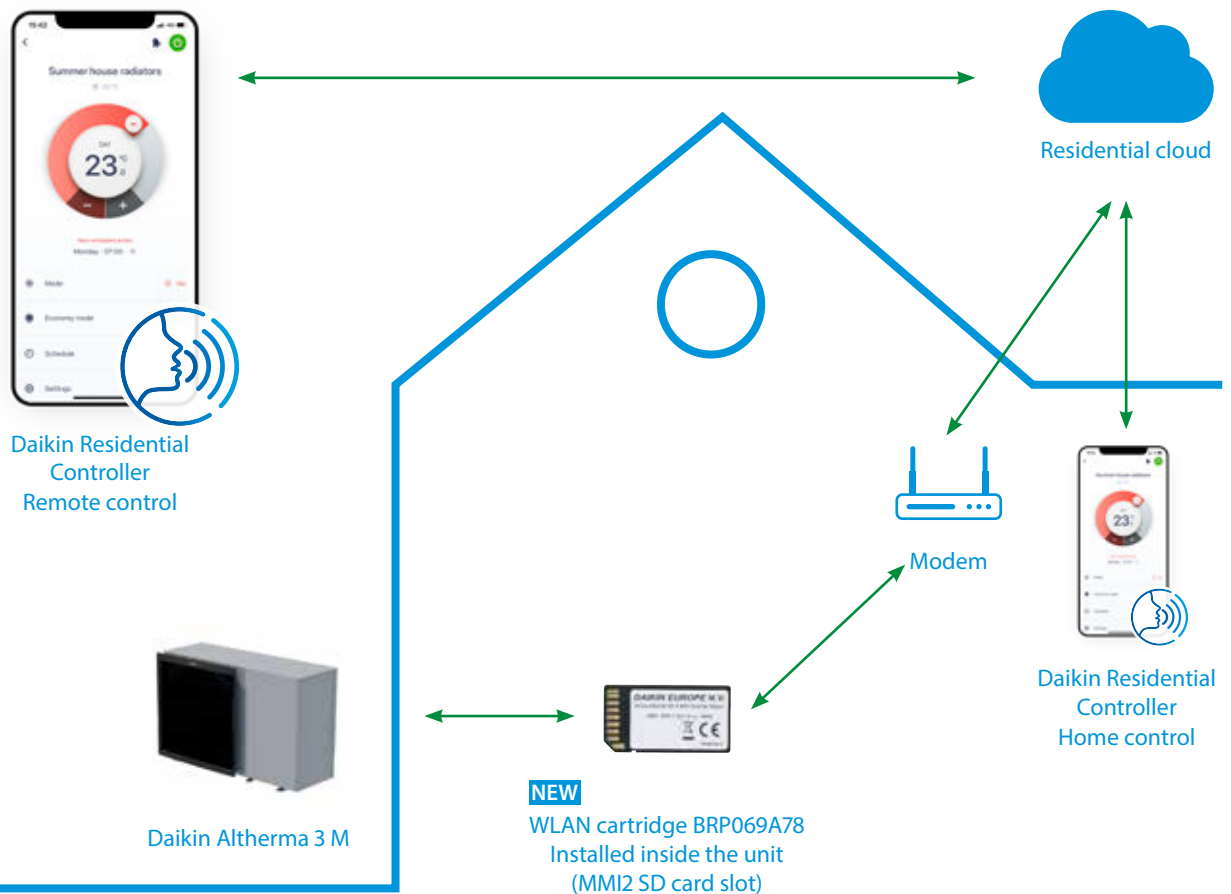
Benefits

☑ More connected to end users
☑ No hassle to switch from "home" to "out of home"
☑ Prepared for remote support from installers
☑ Prepared for preventive maintenance

Adjust the temperature of individual rooms

General features

› Improve a home's energy efficiency
› Universally deployable and scalable
› Easy and intuitive installation, operation and maintenance
› Cost-effective and convenient

How it works

With the help of an electronic room-by-room control system, users can regulate the temperature of each room individually.

In addition to the warmth output of the actual heating surfaces, the room temperature control system also takes other heat sources into account, such as sunshine, warmth from lights or people, and other heat sources, such as a fireplace or a tiled stove.

Based on a continuous comparison of the target and current temperatures, the room temperature control system opens and closes the individual heating circuits through electrical valve actuators.

System components

Base station EKWUFHTA1V3

The Daikin Wired Base Station is the central connection unit for room-by-room temperature control. It changes the surface temperature by adjusting heating and cooling systems.

Wired analogue thermostat EKWCTRAN1V3

The Wired Analogue Thermostat is for customers that prefer to adjust the room temperature without the additional features, such as scheduling or performance boosts.

Wired digital thermostat EKWCTRDI1V3

The setting of the desired room temperature and the operation, can be performed comfortably via a rotary control with rotary-push action and soft ratchet. The well-structured and language-neutral symbols of the display always clearly indicate all settings.

Valve actuator EKWCVATR1V3

The Daikin Valve Actuator is a thermoelectric valve drive for opening and closing valves on heating circuit distributors of concealed heating and cooling systems.

Daikin Altherma HPC

Floor standing model
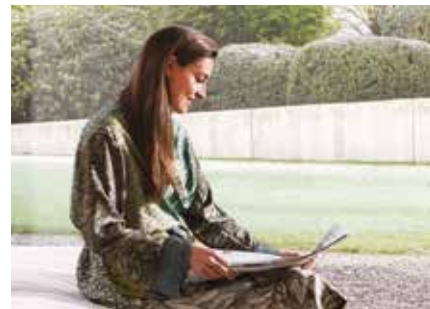
The Daikin Altherma HPC provides cooling and heating and is combinable with underfloor piping. The unit is available in 3 models: floor standing, wall mounted and concealed. Its quiet operation makes it an ideal choice for bedroom and or living rooms.

What is a heat pump convector?

The way a heat pump convector works is similar to a radiator, as both use convection to heat a room. A radiator creates convection by running water through its pipes. With a heat pump convector, a radiator's convection process is faster because there's a small fan behind it speeding up the heating cycle.

A heat pump convector creates the same room temperature as a traditional radiator, but with lower water temperatures.

A lower water temperature ensures more energy savings in the long run.

35 °C ~ 45 °C

Airflow
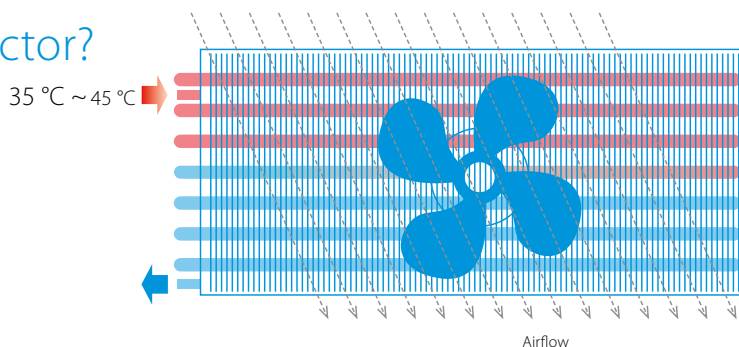
› Optimal for newly built homes
› The low water temperature (35 °C) means this unit is ideal for heat pump applications

Slim design

The floor standing Daikin Altherma HPC measures 135 mm (depth), allowing this heat pump convector to fit in any house or apartment.

Fast and high capacity

The Daikin Altherma HPC delivers high-capacity heating or cooling faster and can be selected at ultra-low temperatures (35/30 °C).

FWXV20ATV3(R)
Length: 1,399 mm

FWXV15ATV3(R)
Length: 1,199 mm

FWXV10ATV3(R)
Length: 999 mm

Depth: 135 mm
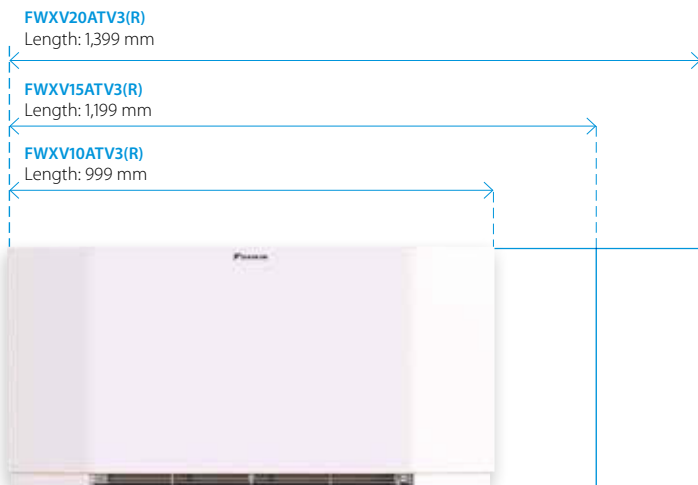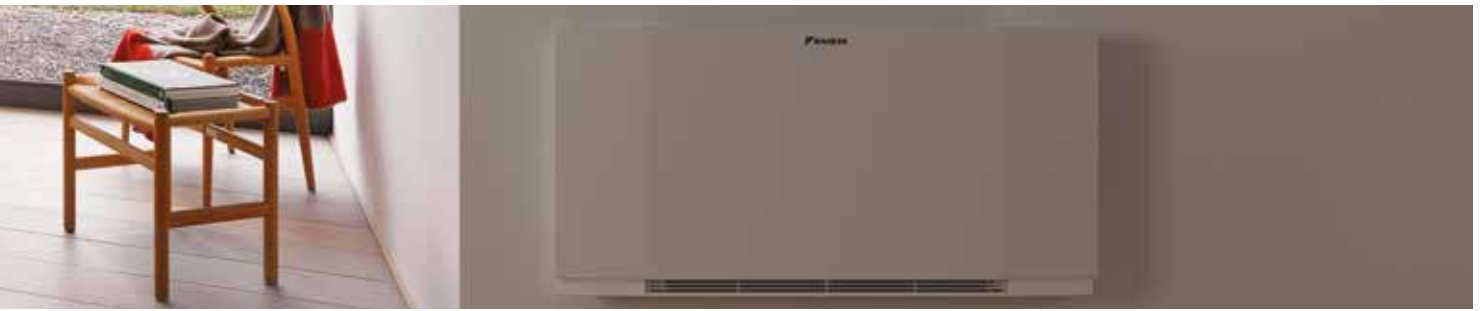
Discreet

As the unit reaches its set point, a continuous modulating fan gradually reduces its speed and creates less noise. The unit's sound pressure measures 25dB(A) at 1 m when the fan is on a low-speed setting.

Sound pressure*

Birds
42 dBA

Library
35 dBA

Forest
30 dBA

Daikin Altherma HPC
25 dBA

Whispering
20 dBA

* At 1 metre.
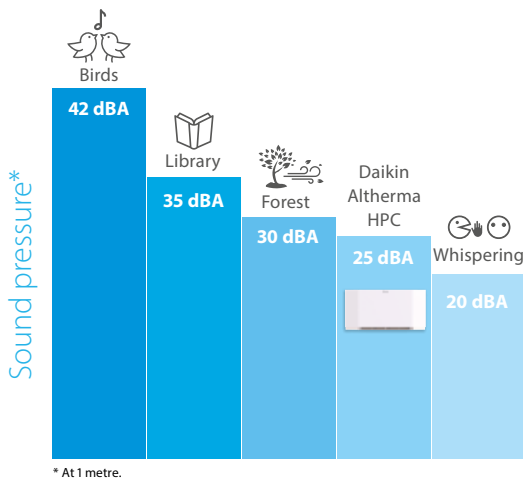
DC Inverter

Daikin Altherma HPC uses the latest technologies to consume less electricity (down to 3W of standby power).

Controllers

Daikin offers a wide variety of controllers that are functional and have a great design.

EKRTCTRL1
› Built-in controller
› Fully modulating
› Multicolour display

EKRTCTRL2
› Built-in controller
› 4-speed selection

EKWHCTRL1
› Wall controller
› Fully modulating
› Combinable with EKWHCTRL0

EKPCBO
› Built-in controller
› ON/OFF
› Combinable with external thermostats

Modulated airflow

When there is less heating demand, the unit modulates its airflow to slow down the fan rate, and in the process, lowers the operational sound. A standard ON/OFF fan running simultaneously at full speed can increase sound pressure.

RPM

ON/OFF
Modulating
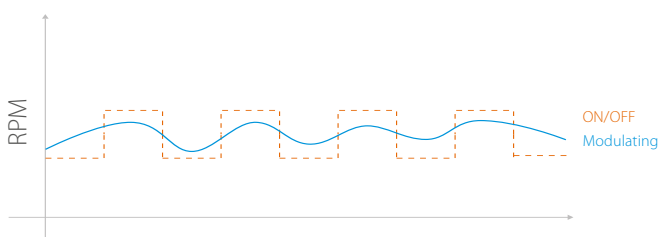
* Only applicable for EKRTCTRL1, EKWHCTRL1.

Perfect combination

This heat pump convector fits perfectly within the Daikin Altherma 3 range.

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Wall mounted model

Slim design

Daikin Altherma HPC is a compact unit made of a design metal casing with built-in valves. The wall-hung application saves floor space for furniture and decor.

FWXT20ATV3(C)(CL)
Length: 1,302 mm

FWXT15ATV3(C)(CL)
Length: 1,102 mm

FWXT10ATV3(C)(CL)
Length: 902 mm

318 mm

Depth: 128 mm
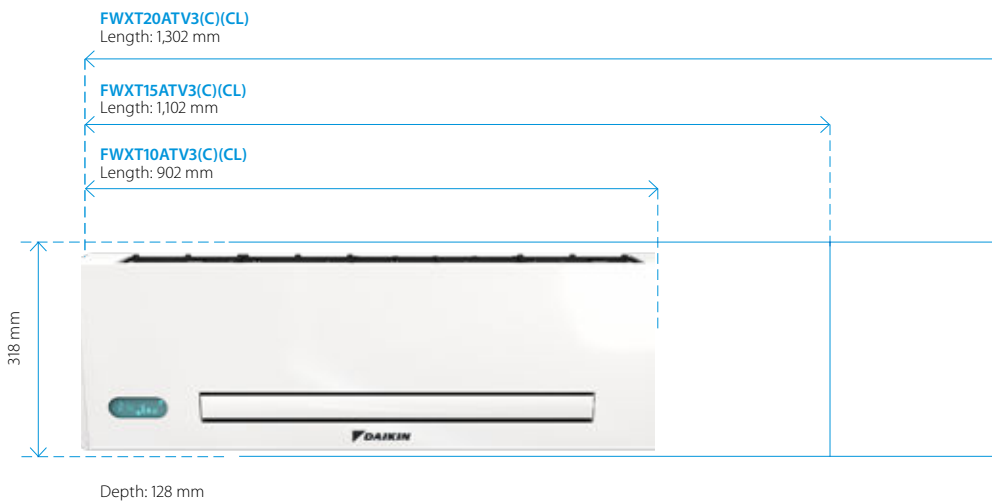
Controllers

Choice of:
› Fully modulating controller allowing remote control of the unit
› Infrared remote controller and on-board touch panel (C and CL models).

EKWHCTRL1

› Wall controller
› Fully modulating

Infrared remote controller

Compactness
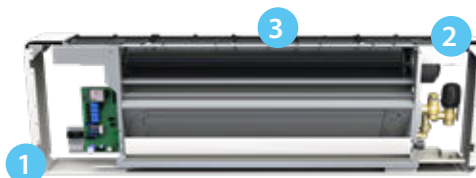
1 **Slim depth**
Depth of 129 mm is an outstanding technical achievement that ensures the unit fits well with any residential dwelling.

2 **More space for valves**
The wide and accessible valves ensure an easy installation process. .

3 **Modulated airflow**
When there's a low heating demand, the unit modulates its airflow to slow down the fan, and in the process, lowers the operational sound.

A standard ON/OFF fan running simultaneously at full speed can increase sound pressure.

Concealed model

Slim design

Blue dimensions are for the front cover.

FWXM20ATV3(R)
Length: 1,130/1,372 mm

FWXM15ATV3(R)
Length: 925/1,172 mm

FWXM10ATV3(R)
Length: 725/972 mm

576/754 mm

Depth: 126 mm

Flexible installation

Daikin Altherma HPC can be installed in 4 different ways, allowing you to install it in almost all conditions. The unit can be positioned horizontally or vertically. There are 3 different horizontal options:

› Horizontal cover panel and vertical grille for air outlet
› Horizontal intake grille and vertical grille for air outlet
› Horizontal in and out grilles for air outlet

Controllers

EKWHCTRL1

› Wall controller
› Fully modulating
› Combinable with EKWHCTRL0

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Indoor unit					FWXV10ATV3(R)	FWXV15ATV3(R)	FWXV20ATV3(R)
Cooling capacity at 7/12 °C	Min.			kW	0,66	1,30	1,82
	Med.			kW	1,36	2,16	2,52
	Max.			kW	1,77	2,89	3,20
Sensible cooling capacity at 7/12 °C	Min.			kW	0,39	0,99	1,22
	Med.			kW	0,98	1,53	1,55
	Max.			kW	1,33	2,10	1,78
Heating capacity at 35/30 °C	Min.			kW	0,41	0,45	0,93
	Med.			kW	0,82	1,29	1,66
	Max.			kW	1,14	1,73	2,15
Heating capacity at 45/40 °C	Min.			kW	0,95	1,24	1,90
	Med.			kW	1,63	2,33	3,05
	Max.			kW	2,18	3,11	3,88
Power input	Min.			kW	0,004	0,005	0,010
	Med.			kW	0,011	0,012	0,016
	Max.			kW	0,020	0,020	0,030
Fan speed	Min.			m³/h	118	180	246
	Med.			m³/h	210	318	410
	Max.			m³/h	294	438	566
Casing	Colour					RAL 9003	
	Material					Metal sheet	
Dimensions	Unit	Height		mm		601	
		Width		mm	999	1199	1399
		Depth		mm	135	135	135
	Packed unit	Height		mm		690	
		Width		mm	1230	1430	1630
		Depth		mm		210	
Weight	Unit			kg	20	23	26
	Packed unit			kg	21	24	27
Packing	Material					Carton	
	Weight			kg		1	
Heat exchanger	Quantity				1	1	1
	Internal coil volume			l	0,8	1,13	1,46
		Max Operating pressure		bar		10	
Water circuit	Piping connections diameter			inch		3/4" male	
	Piping material					EUROKONUS	
	Heating - Water pressure drop at 35/30 °C	Min.		kPa	0,3	2,0	1,2
		Med.		kPa	1,3	7,5	4,0
		Max.		kPa	2,4	12,3	8,0
	Heating - Water pressure drop at 45/40 °C	Min.		kPa	1,3	8,6	3,8
		Med.		kPa	4,2	3,3	11,2
		Max.		kPa	7,2	11,5	21,3
	Cooling - Water pressure drop at 7/12 °C	Min.		kPa	1,2	4,3	2,1
		Med.		kPa	2,8	19,3	13,1
		Max.		kPa	2,9	27,0	24,0
	Heating - Water flow rate at 35/30 °C	Min.		kg/h	69,9	73,6	160,2
		Med.		kg/h	141,4	221,1	285,3
		Max.		kg/h	195,2	297,2	369,9
	Heating - Water flow rate at 45/40 °C	Min.		kg/h	163,5	212,5	327,0
		Med.		kg/h	280,3	401,1	524,6
		Max.		kg/h	374,1	534,5	667,5
	Cooling - Water flow rate at 7/12 °C	Min.		kg/h	113,5	223,7	313,0
		Med.		kg/h	234,1	371,7	433,6
		Max.		kg/h	303,6	496,6	550,6
	Pressure	Heating/Max.		bar	10	10	10
Sound power level	Super silent			dBA	29	31	32
	Min.			dBA	34	35	35
	Max.			dBA	55	57	58
Sound pressure level	Super silent			dBA	20	22	23
	Min.			dBA	25	26	26
	Max.			dBA	42	44	45
Operation range	Heating	Water side	Min.	°C		30	
			Max.	°C.		85	
	Cooling	Water side	Min.	°C.		5	
			Max.	°C		18	
	Indoor installation	Ambient	Min.	°CDB		0	
			Max.	°CDB		45	
Control systems	Infrared remote control					no	
	On board control					yes	
Electrical specifications					FWXV10ATV3(R)	FWXV15ATV3(R)	FWXV20ATV3(R)
Power supply	Phase					1	
	Frequency			Hz		50	
	Voltage			V		230	
Electrical power consumption	Max.			W	19	20	29
	Standby			W	3	4	5
Current	Maximum running current			A	0,16	0,16	0,26

Indoor unit					FWXM10ATV3(R)	FWXM15ATV3(R)	FWXM20ATV3(R)
Cooling capacity at 7/12 °C	Min.			kW	0,75	1,15	1,32
	Med.			kW	1,36	2,08	2,39
	Max.			kW	2,12	2,81	3,30
Sensible cooling capacity at 7/12 °C	Min.			kW	0,59	0,83	1,02
	Med.			kW	1,07	1,51	1,84
	Max.			kW	1,72	2,11	2,71
Heating capacity at 35/30 °C	Min.			kW	0,41	0,45	0,93
	Med.			kW	0,82	1,29	1,66
	Max.			kW	1,14	1,73	2,15
Heating capacity at 45/40 °C	Min.			kW	0,82	1,20	1,47
	Med.			kW	1,53	2,16	2,59
	Max.			kW	2,21	3,02	3,81
Power input	Min.			kW	0,004	0,005	0,006
	Med.			kW	0,008	0,011	0,011
	Max.			kW	0,019	0,020	0,029
Fan speed	Min.			m³/h	118	180	246
	Med.			m³/h	210	318	410
	Max.			m³/h	294	438	566
Casing	Material				No casing		
Dimensions	Unit	Height		mm	576		
		Width		mm	725	925	1125
		Depth		mm	126	126	126
	Packed unit	Height		mm	690		
		Width		mm	830	1030	1230
		Depth		mm	210		
Weight	Unit			kg	12	15	18
	Packed unit			kg	13	16	19
Packing	Material				Carton		
	Weight			kg	1		
Heat exchanger	Quantity				1	1	1
	Internal coil volume			l	0,8	1,13	1,46
		Max Operating pressure		bar	10		
Water circuit	Piping connections diameter			inch	3/4" male		
	Piping material				EUROKONUS		
	Heating - Water pressure drop at 35/30 °C	Min.		kPa	0,3	2,0	1,2
		Med.		kPa	1,3	7,5	4,0
		Max.		kPa	2,4	12,3	8,0
	Heating - Water pressure drop at 45/40 °C	Min.		kPa	1,3	8,6	3,8
		Med.		kPa	4,2	3,3	11,2
		Max.		kPa	7,2	11,5	21,3
	Cooling - Water pressure drop at 7/12 °C	Min.		kPa	1,2	4,3	2,1
		Med.		kPa	2,8	19,3	13,1
		Max.		kPa	2,9	27,0	24,0
	Heating - Water flow rate at 35/30 °C	Min.		kg/h	69,9	73,6	160,2
		Med.		kg/h	141,4	221,1	285,3
		Max.		kg/h	195,2	297,2	369,9
	Heating - Water flow rate at 45/40 °C	Min.		kg/h	163,5	212,5	327,0
		Med.		kg/h	280,3	401,1	524,6
		Max.		kg/h	374,1	534,5	667,5
	Cooling - Water flow rate at 7/12 °C	Min.		kg/h	113,5	223,7	313,0
		Med.		kg/h	234,1	371,7	433,6
		Max.		kg/h	303,6	496,6	550,6
	Pressure	Heating/Max.		bar	10	10	10
Sound power level	Super silent			dBA	29	31	32
	Min.			dBA	35	35	36
	Max.			dBA	53	54	55
Sound pressure level	Super silent			dBA	20	22	23
	Min.			dBA	25	26	26
	Max.			dBA	42	44	46
Operation range	Heating	Water side	Min.	°C	30		
			Max.	°C.	85		
	Cooling	Water side	Min.	°C.	5		
			Max.	°C	18		
	Indoor installation	Ambient	Min.	°CDB	0		
			Max.	°CDB	45		
Control systems	Infrared remote control				no		
	On board control				no		
Electrical specifications					FWXM10ATV3(R)	FWXM15ATV3(R)	FWXM20ATV3(R)
Power supply	Phase				1		
	Frequency			Hz	50		
	Voltage			V	230		
Electrical power consumption	Max.			W	19	20	29
	Standby			W	3	4	5
Current	Maximum running current			A	0,16	0,16	0,26

Indoor unit					FWXT10ATV3(C)(CL)	FWXT15ATV3(C)(CL)	FWXT20ATV3(C)(CL)
Cooling capacity at 7/12 °C	Min.			kW	0,53	0,65	0,74
	Med.			kW	0,98	1,20	1,35
	Max.			kW	1,21	1,62	2,12
Sensible cooling capacity at 7/12 °C	Min.			kW	0,13	0,15	0,36
	Med.			kW	0,40	0,56	0,70
	Max.			kW	1,01	1,44	1,99
Heating capacity at 35/30 °C	Min.			kW	0,29	0,23	0,47
	Med.			kW	0,48	0,69	1,08
	Max.			kW	0,66	1,00	1,44
Heating capacity at 45/40 °C	Min.			kW	0,61	0,85	1,08
	Med.			kW	1,12	1,51	1,95
	Max.			kW	1,51	2,03	2,62
Power input	Min.			kW	0,004	0,005	0,006
	Max.			kW	0,019	0,020	0,029
Fan speed	Min.			m³/h	84	124	138
	Med.			m³/h	155	229	283
	Max.			m³/h	228	331	440
Casing	Colour				RAL 9003		
	Material				Metal sheet		
Dimensions	Unit	Height		mm	335		
		Width		mm	902	1100	1300
		Depth		mm	128		
	Packed unit	Height		mm	490		
		Width		mm	1030	1230	1430
		Depth		mm	210		
Weight	Unit			kg	14	16	19
	Packed unit			kg	15	17	20
Packing	Material				Carton		
	Weight			kg	1		
Heat exchanger	Quantity				1		
	Internal coil volume			l	0,54	0,74	0,93
		Max Operating pressure		bar	10		
Water circuit	Piping connections diameter			inch	3/4" male		
	Piping material				EUROKONUS		
	Heating - Water pressure drop at 35/30 °C	Min.		kPa	0,2	1,9	0,3
		Med.		kPa	0,9	2,9	1,4
		Max.		kPa	1,6	3,3	2,3
	Heating - Water pressure drop at 45/40 °C	Min.		kPa	1,1	2,8	1,1
		Med.		kPa	3,1	3,5	4,1
		Max.		kPa	5,4	4,0	6,6
	Cooling - Water pressure drop at 7/12 °C	Min.		kPa	1,1	3,9	1,3
		Med.		kPa	3,0	4,8	4,2
		Max.		kPa	5,2	5,7	6,9
	Heating - Water flow rate at 35/30 °C	Min.		kg/h	39,3	39,0	80,8
		Med.		kg/h	81,8	119,4	185,4
		Max.		kg/h	114,0	172,4	247,8
	Heating - Water flow rate at 45/40 °C	Min.		kg/h	91,9	112,6	164,8
		Med.		kg/h	162,0	216,6	341,0
		Max.		kg/h	218,4	310,0	447,2
	Cooling - Water flow rate at 7/12 °C	Min.		kg/h	82,1	98,9	156,5
		Med.		kg/h	138,1	177,4	300,6
		Max.		kg/h	184,4	283,0	396,8
	Pressure	Heating/Max.		bar	10	10	10
Sound power level	Min.			dBA	35	36	36
	Max.			dBA	53	54	55
Sound pressure level	Min.			dBA	25	25	26
	Max.			dBA	40	42	43
Operation range	Heating	Water side	Min.	°C	30		
			Max.	°C.	85		
	Cooling	Water side	Min.	°C.	5		
			Max.	°C	18		
	Indoor installation	Ambient	Min.	°CDB	0		
			Max.	°CDB	45		
Electrical specifications					FWXT10ATV3(C)(CL)	FWXT15ATV3(C)(CL)	FWXT20ATV3(C)(CL)
Power supply	Phase				1		
	Frequency			Hz	50		
	Voltage			V	230		
Electrical power consumption	Max.			W	17,6	19,8	26,5
	Standby			W	5	5	5,8
Current	Maximum running current			A	0,16		

Accessories

		FWXV10ATV3(R)	FWXM10ATV3(R)	FWXM15ATV3(R)	FWXM20ATV3(R)	FWXT10ATV3(C)(CL)
		FWXV15ATV3(R)				FWXT15ATV3(C)(CL)
		FWXV20ATV3(R)				FWXT20ATV3(C)(CL)
		DC Inverter fan coil unit with sheet metal cabinet (white colour)	Built in DC Inverter fancoil for horizontal and vertical			High Wall fancoil

Material name	Description	Picture					
EKRTCTRL1	On board electronic control SMART TOUCH with PID full modulating fan and thermostat		Opt				
EKRTCTRL2	On board electronic control SMART TOUCH 4 speeds with thermostat		Opt				
EKPCBO	On board 4 speeds control switch to be combine with Daikin combinable thermostats		Opt				
EKWHCTRL0	On board controller for EKWHCTRL1		Opt	Opt	Opt	Opt	
EKWHCTRL1	SMART LCD wall controller with temperature probe, white casing		Opt	Opt	Opt	Opt	Opt
EKFA	Aestetical feet		Opt				
EK2VK0	Motorized 2-way valve (FWXV/M)		Opt	Opt	Opt	Opt	
EKT2VK0	Motorized 2-way valve (FWXT)						Opt
EK3VK1	Motorized 3-way valve (FWXV/M)		Opt	Opt	Opt	Opt	
EKT3VK1	Motorized 3-way valve (FWXT)						Opt
EKEUR90	L-bow 90 °C		Opt	Opt	Opt	Opt	
EKDIST	Extension piece		Opt	Opt	Opt	Opt	
EKM10COH	Condensate collector tray for horizontal installation		FWXV10ATV3(R)				
EKM15COH			FWXV15ATV3(R)				
EKM20COH			FWXV20ATV3(R)				
EKM10CS	Metal casing			Opt			
EKM15CS					Opt		
EKM20CS						Opt	
EKM10CH	Front cover for ceiling installation			Opt			
EKM15CH					Opt		
EKM20CH						Opt	
EKM10CV	Front cover for wall installation			Opt			
EKM15CV					Opt		
EKM20CV						Opt	
EKM10DH	Air intake fitting			Opt			
EKM15DH					Opt		
EKM20DH						Opt	
EKM10D90	90 °C exhaust bend (Horizontal)			Opt			
EKM15D90					Opt		
EKM20D90						Opt	
EKM10DT	Telescopic air flow duct			Opt			
EKM15DT					Opt		
EKM20DT						Opt	
EKM10IS	Aluminum air intake grill with straight airflow			Opt			
EKM15IS					Opt		
EKM20IS						Opt	
EKM10SV	Straight airflow vent			Opt			
EKM15SV					Opt		
EKM20SV						Opt	
EKM10IC	Aluminum air intake grill with curved airflow			Opt			
EKM15IC					Opt		
EKM20IC						Opt	
EKM10CA	Aluminum air outlet grill with curved airflow			Opt			
EKM15CA					Opt		
EKM20CA						Opt	

Stand By Me,

a journey to customer satisfaction

With the Stand By Me service programme, you can rest assured your customers are benefiting from the best comfort, energy efficiency, usability and service available on the market. Stand By Me eliminates clients' worries and provides them with a free, extended warranty, quick follow-up from Daikin service providers, and additional warranties for specific parts.

Free warranty extension

FREE

The first advantage of **Stand By Me** is a free warranty extension:

☑ Applies to both labour and parts

☑ Begins immediately after registration

Quick follow-up by Daikin service partners

Daikin service partners are automatically notified when a customer registers their installation on **www.standbyme.daikin.eu** and needs maintenance.

Your customers are guaranteed:

☑ Quick and reliable service

☑ Documentation management related to the installation, (i.e.registration documents, attendance records, maintenance records, etc.)

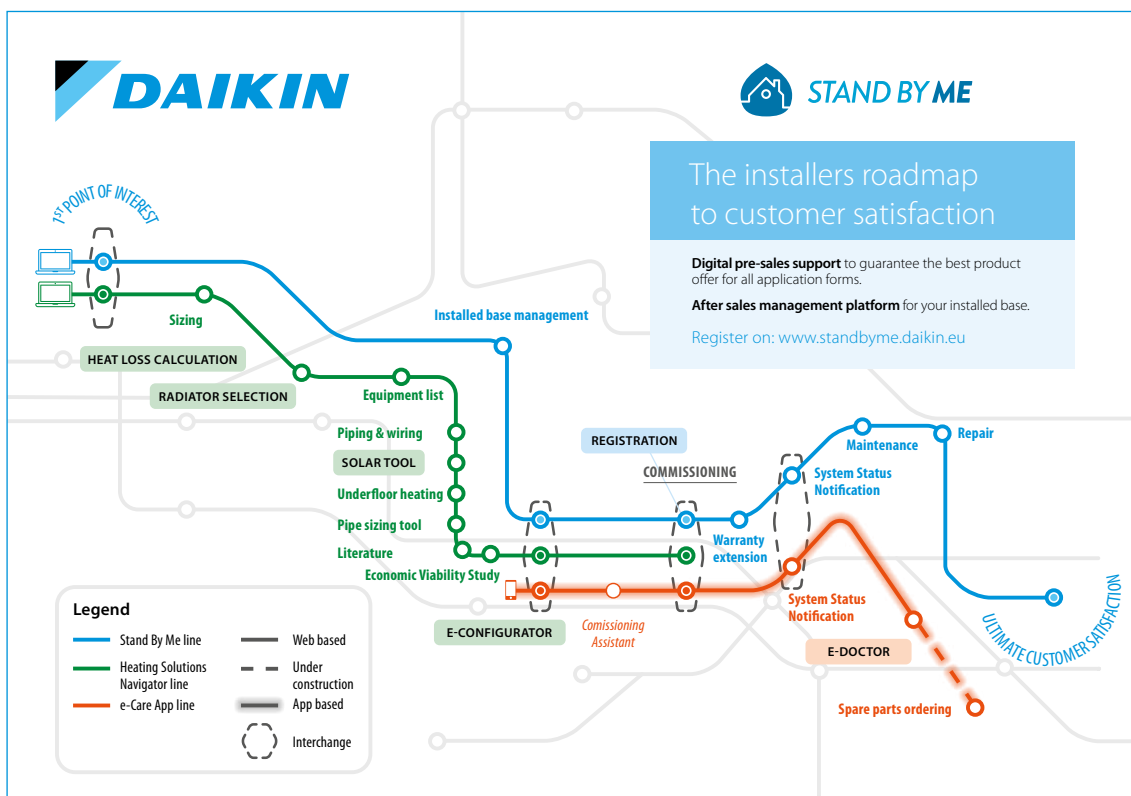☑ Real-time error codes inform the service partner about possible issues

Extended warranty on parts

For a small fee, customers can extend the warranty on specific parts. Contact your local Daikin branch for more information about the specific offer in your country. **Stand By Me** guarantees:

☑ That each component is replaced quickly

☑ Helps avoid financial surprises

☑ Long life and smooth operation and all other benefits of a Daikin installation

☑ Reliable service from official Daikin service partners

Daikin service partners work exclusively with Daikin parts and have all of the necessary technical knowledge to solve any issue that may arise.

Stand By Me roadmap overview

DAIKIN

STAND BY ME

The installers roadmap to customer satisfaction

Digital pre-sales support to guarantee the best product offer for all application forms.

After sales management platform for your installed base.

Register on: www.standbyme.daikin.eu

1ST POINT OF INTEREST

Sizing

HEAT LOSS CALCULATION

RADIATOR SELECTION

Equipment list

Installed base management

Piping & wiring

SOLAR TOOL

REGISTRATION

Maintenance

Repair

System Status Notification

COMMISSIONING

Underfloor heating

Pipe sizing tool

Literature

Warranty extension

Economic Viability Study

System Status Notification

E-CONFIGURATOR

Comissioning Assistant

E-DOCTOR

ULTIMATE CUSTOMER SATISFACTION

Spare parts ordering

Legend

── Stand By Me line	── Web based
── Heating Solutions Navigator line	─ ─ Under construction
── e-Care App line	▒ App based
	Interchange

Heating Solutions Navigator ───○───

› The Heating Solutions Navigator is a digital toolbox developed for Daikin professionals who need to provide the best possible solution for their customers' homes.
› As a service provider, you can use this tool to configure an installation, create custom-made piping and wiring diagrams, and much more.
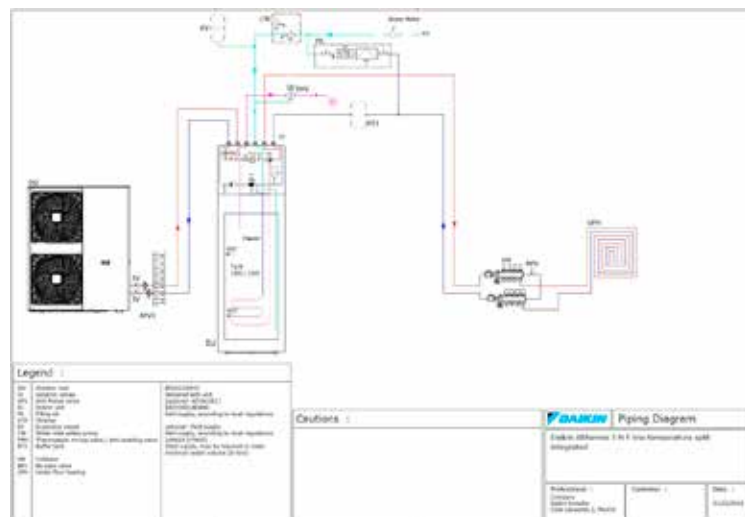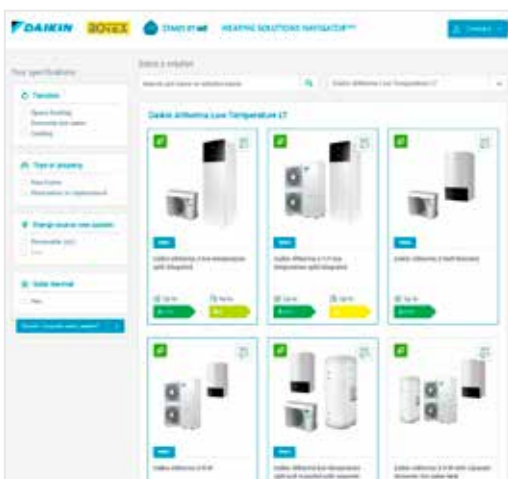

E-Care App ───○───

The Daikin e-Care App makes life easier to install a Daikin unit. This useful app allows you to retrieve Stand By Me registrations by scanning a QR code, easily configure heating installations, and troubleshoot via the e-Doctor feature.

Installers can now:
› Order spare parts directly from the e-Care App
› Update installation settings with a Wifi USB stick
› Avoid issues with the Commissioning Assistant
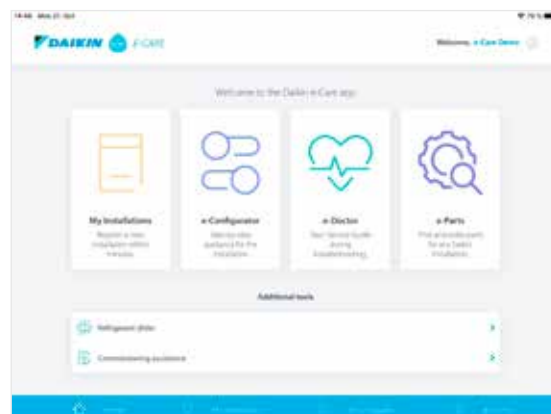
STAND BY ME

www.standbyme.daikin.eu

DEMO

Stand By Me and The Heating Solutions Navigator help connect Daikin with its partners to make installations easier.

Curious to learn how these platforms work? Scan the QR codes below to see a demo for each tool.

SIZING
HSN: Room By Room Heat Load
The optional Room by Room Heat Load Calculation tool helps you estimate the heat load of a property.

SOLAR
HSN: Solar Selection Tool
The Solar Selection Tool shows the benefits of Daikin solar technologies and helps you choose the right system for a home.

PIPE SIZING TOOL
Calculate the maximum hydronic piping length from the indoor unit to the outdoor unit based on the emitter pressure drop or vice versa.

ECONOMIC VIABILITY STUDY
Compare a Daikin solution with a benchmark solution.

INSTALLED BASE MANAGEMENT

DEMO

DEMO

DEMO

DEMO

HEATING SOLUTIONS NAVIGATOR (HSN)

professional.standbyme.daikin.eu

The Heating Solutions Navigator is a digital toolbox that helps you select the right Daikin solution for your customer's home.

LITERATURE

EQUIPMENT LIST

RADIATOR
HSN: Radiator Selection Tool
The Radiator Selector Tool helps you select the appropriate radiator size for each room.

UNDERFLOOR HEATING
The Underfloor Heating Tool provides an overview of materials you'll need for a specific project, a detailed calculation and floor plan.

PIPING & WIRING
Get customised piping and wiring diagrams for every project that take many parameters into account, such as heat generator, zoning, emitter type and more.

CONFIGURATION TOOL
The e-Configurator is a web-based tool and app which allows installers to configure the settings of Daikin Altherma heat pumps remotely.

With a user friendly and intuitive interface, configuration can be completed in a couple of steps. Then it can be stored as a PDF or saved on a USB stick/ SD card to upload into the heat pump on the job site.

REGISTRATION

Installation Registration
SBM is an after-sales service
tool that extends
the warranties of
installations and allows
you to place orders for
maintenance packages.

With Stand By Me, you have
access to a digital logbook to
keep track of all your Daikin
installations and refer back
them via any mobile device.

**SYSTEM STATUS
NOTIFICATION**

MAINTENANCE

REPAIR

DEMO

COMMISSIONING

**WARRANTY
EXTENSION**

ULTIMATE CUSTOMER SATISFACTION

**COMMISSIONING
ASSISTANT**

Use this special hydro
check module during
commissioning.

DEMO

**SYSTEM STATUS
NOTIFICATION**

You can choose to
receive malfunction
codes about your
installations via the
Stand By Me platform
or the e-Care App.

E-DOCTOR

e-Care App:
Daikin e-Doctor is
part of the e-Care App
and offers assistance
when you need to
troubleshoot a unit.

**SPARE PARTS
ORDERING**

E-CARE

Download on the
App Store

ANDROID APP ON
Google play

DAIKIN

*Stand By Me, a journey towards
customer satisfaction*

FSC

ECPEN20-756   11/20

CERTIFIED
ISO 9001·ISO 14001

CE