



Heat Pump Solutions



The power behind **your mission**



Benefits of using heat pumps

Traditional systems used to heat water for hydronic heating and domestic hot water are not energy efficient. Heat pumps offer a number of advantages when compared to fossil-fuel water heaters:

- ▶ Higher COPs offer **energy cost-savings above 50%**.
- ▶ Thanks to their efficiency and short amortization period, they represent an environmentally compatible and economically attractive alternative to conventional heating systems. **Potential payback of the heat pump can be less than 2 years.**
- ▶ **Low operating-cost supplement** to water heaters where total heating requirement exceeds heat pump capacity.
- ▶ **Heat pumps can also be used as water chillers**, which means lower first-costs, as one item of equipment performs cooling and heating.
- ▶ **Life cycle of over 20 years.**

Johnson Controls heat pumps offer additional benefits by using environmentally friendly HFC, HFO and natural refrigerants, with **zero ozone depletion potential, and low global warming potential.**



Reduced operating costs

The best way to compare the efficiency of a heat pump and a water heater is to do a COP analysis. COP equals the energy output (useful heat generated) divided by the energy input (energy supplied to the equipment).

Accordingly, the higher the COP, the more efficient the system – and the lower your running costs!

Hot Water Requirement	Energy Source	Efficiency	Energy Consumption	Cost of Source*	Cost of Hot Water Requirement	HP Saving vs Gas Boiler
1 kWh 	Natural Gas Boiler 	Average efficiency COP=0,9	 1 kWh / 0,9 1,11 kWh	European Avg. Gas Cost 0,041 €/kWh	1,11 kWh x 0,041€/ kWh 4,5 c€	-
1 kWh 	Air cooled Heat Pump 	Average efficiency COP=3,2	 1 kWh / 3,2 0,31 kWh	European Avg. Electricity Cost 0,12 €/kWh	0,31 kWh x 0,12€/ kWh 3,7 c€	18%
1 kWh 	Water cooled Heat Pump 	Average efficiency COP=5,5	 1 kWh / 5,5 0,18 kWh	European Avg. Electricity Cost 0,12 €/kWh	0,18 kWh x 0,12€/ kWh 2,1 c€	53%

* Cost of Source: Eurostat Statistics web site.

As an example we can take a 1800 kW water-cooled heat pump as the one showed in chart and compare it to a natural gas boiler. When you compare the efficiency of a boiler to a heat pump, the heat pump comes out way ahead.

In the example given it's possible to save up to 53% in the energy bill vs the traditional natural gas boiler!



Reduced water and chemical consumption

When a heat pump is operating we are keeping heat within the building and not rejecting heat to the atmosphere. In other words, we're saving condenser water from evaporating.

So when we look at our same 1800 kW water-cooled heat pump example again, how much water are we saving by not expelling heat to the atmosphere from the cooling tower?

Over 26 million litres annually!



CO₂ footprint reductions

Another benefit that offers heat pump technology is the reduction in CO₂ emissions from fossil fuel use. Heat pumps are a highly efficient electric alternative.

Hot Water Requirem.	Energy Source	Efficiency	Energy Consumption	CO ₂ Source Emissions*	Carbon Footprint	HP CO ₂ footprint reduction vs Gas Boiler
1 kWh 	Natural Gas Boiler 	Average efficiency COP=0,9	 1 kWh / 0,9 1,11 kWh	CO ₂ Emissions 204 g CO ₂ / kWh	 1,11 kWh x 204g CO ₂ /kWh 226 g CO ₂	-
1 kWh 	Air cooled Heat Pump 	Average efficiency COP=3,2	 1 kWh / 3,2 0,31 kWh	CO ₂ Emissions 541 g CO ₂ / kWh	 0,31 kWh x 541g CO ₂ /kWh 167 g CO ₂	26%
1 kWh 	Water cooled Heat Pump 	Average efficiency COP=5,5	 1 kWh / 5,5 0,18 kWh	CO ₂ Emissions 541 g CO ₂ / kWh	 0,18 kWh x 541g CO ₂ /kWh 97 g CO ₂	57%

* CO₂ Source Emissions: UK Department of Energy, Food and Rural Affairs and carbonindependent web site

If we refer to the same example with a 1800 kW water-cooled heat pump and compare it to a natural gas boiler, the reduction in CO₂ emissions is impressive.

In fact 1322 tons of CO₂ annually can be saved, which is the equivalent of removing about 278 cars* from the road!

* <http://www.epa.gov/cleanrgy/energy-resources/calculator.html>



LEED points

Heat pumps will help you and your customers get LEED points. LEED is one of the most recognizable bodies that certifies building designs to demonstrate leadership in environmental impact.

The use of a heat pump also helps accreditation for BREEAM and other similar schemes.



Introduction

Why choose an air source heat pump?



Typically around 3kWh of energy can be captured for every 1kWh of electrical energy expended, giving almost 4kWh of heat energy for only 1kWh of electrical input and giving efficiency of almost 400%.

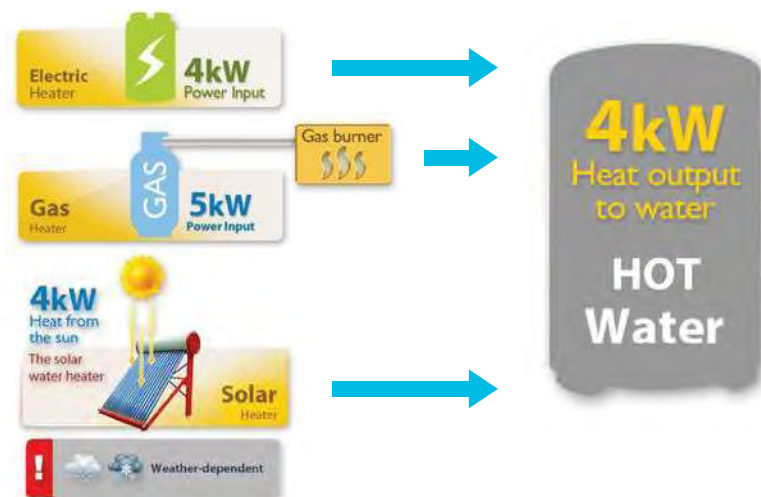
Comparison of energy sources

	YORK air source heat pump	Gas boiler	Electric water Heater	Diesel boiler	Solar water heater
Energy source	Air and electricity	LPG	Electric	Diesel	Sun and electricity
Calorific value	860kcal/kWh	24000kcal/m ³	860kcal/kWh	10200kcal/kg	860kcal/kWh
Average efficiency	4.0	0.8	0.95	0.7	2.7
Consumption*	11.63kWh	2.09m ³	48,96kWh	5.6kg	17,22kWh
Running cost (USD)	0.9	5.9	4.3	6.5	1.5

LPG: Liquefied Petroleum Gas

1. Products tested under controlled conditions at YORK laboratories.

2. * 40,000 kcal are required to heat 1 ton of water from 15°C to 55°C.



Total heat solution – Heating, cooling and domestic hot water in one system

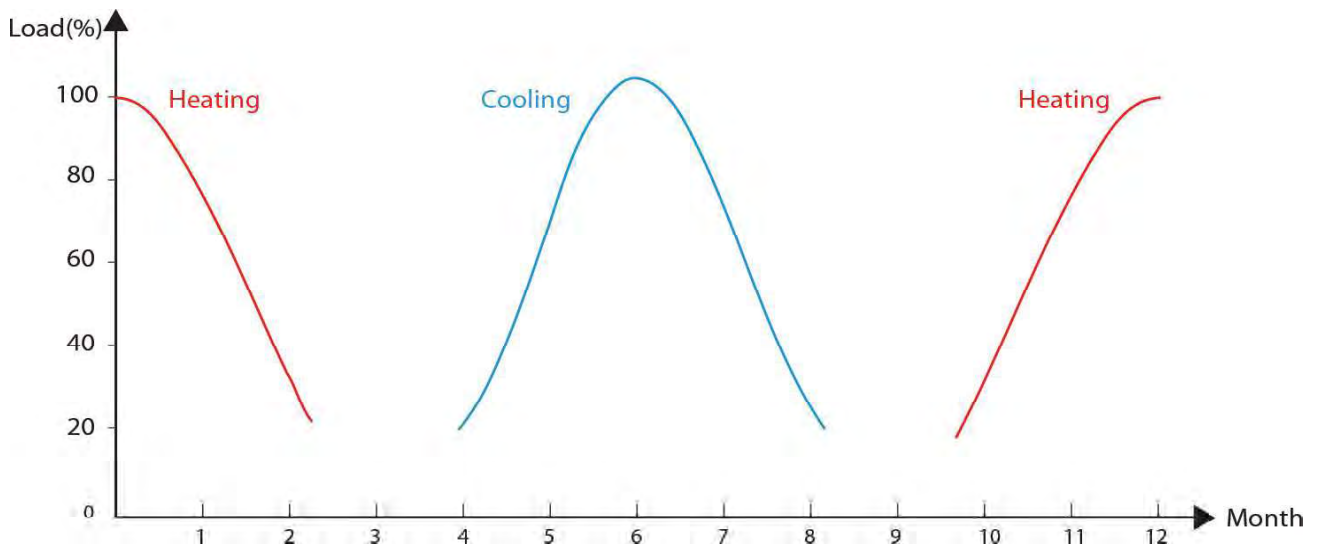
YKF is an integrated system that provides space heating and cooling as well as domestic hot water, offering a complete, all-year-round solution which can remove the need for traditional gas or oil boilers, or work together with.



- The outside air is a renewable source of energy
- DC inverter technology enables high energy efficiency
- Sufficient heating capacity at low ambient temperatures (even at -25°C)
- Provide space heating, cooling and domestic hot water, total heat solution
- Compatible with other heat sources such as solar panels and boilers

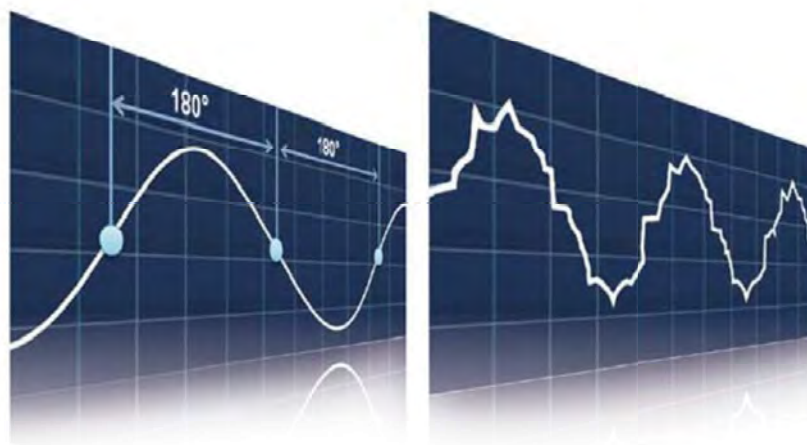
Direct Current (DC) Inverter Technology

The amount of heating and cooling required changes through the year. The motors traditionally used in heat pumps run at full power even during part-load operation, wasting energy. YORK's YKF products use DC inverter technology, which allows precise control of motor speed, ensuring that only the power necessary to perfectly match the real load is used.



High energy efficiency

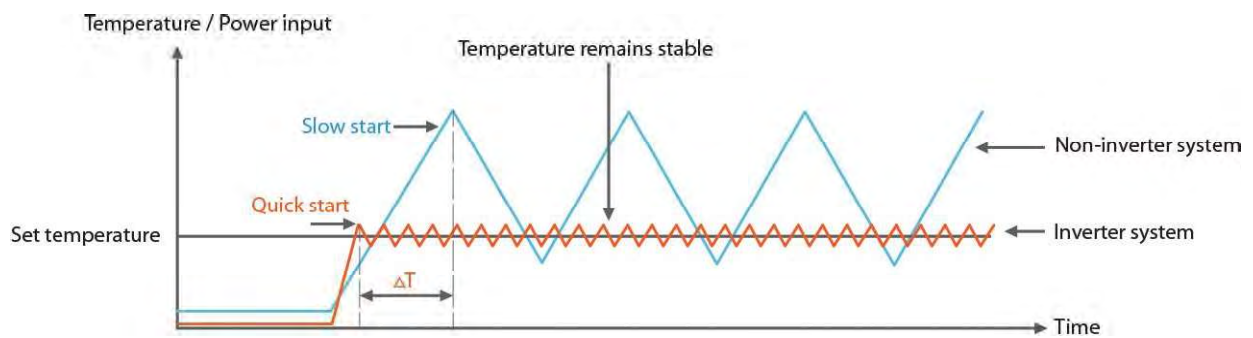
Thanks to improved motor and drive efficiency of the DC inverter technology, the YKF twin rotary DC inverter compressor uses 30% less power than traditional scroll compressors while also giving a wider operating frequency range, enabling precise control and reducing running noise levels.



Smooth sine wave improves efficiency by around 30% compared to conventional saw tooth wave

Stable water temperature improves comfort

Precise control of the compressor speed ensures that the water temperature is maintained within a much smaller range around the set temperature than is possible with non-inverter systems.



Quick start-up

The inverter system output power closely matches the energy demand by adjusting motor frequency, so it is possible to achieve comfort conditions in less time than a system without inverter.

Less frequent start/stop

The ability to vary compressor speed (as opposed to simple on/off control) means that the compressors experience fewer start/stop cycles which expands compressor lifespan and reduces noise.

Quiet operation

Most of the time, the capacity required for heating/cooling is lower than the peak load condition, meaning that heat pumps work under part-load conditions most of the time. With DC inverter compressors adjusting rotation speed according to the actual load requirement, noise levels are lower than with traditional compressor technology.



Features

YKF Mono

High efficiency and wide operating range



Finned tube heat exchanger

Air side heat exchanger with copper tubing optimizes heating efficiency. Hydrophillic coating improves condensate drainage, reducing frost accumulation and improving corrosion resistance.



Brushless DC fan motor

Stepless fan motor control enables super-quiet fan operation and minimizes power consumption.

Twin rotary compressor

Twin rotary DC inverter compressor uses 30% less power than traditional scroll compressors while giving a wider operating frequency range, enabling precise control and reducing running noise levels.

Single rotor Twin rotor

- High efficiency DC motor:
 - Innovative motor core design
 - High density neodymium magnet
 - Concentrated stator
 - Wide operating frequency range
- Better balance and extremely low vibration:
 - Twin eccentric cams
 - 2 balance weights
- Highly stable moving parts:
 - Optimize compressor drive technology
 - Highly robust bearings
 - Compact structure

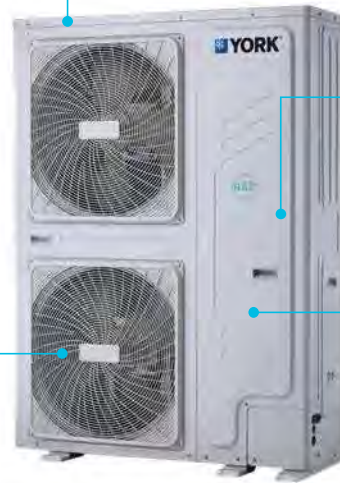
Twin rotary compressor

Spray liquid cooling control of compressor is benefit for enhancing heating capacity in low temperature condition.

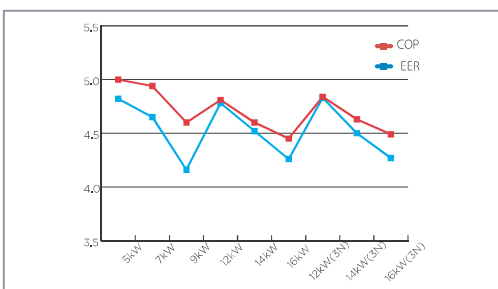


Hydronic module

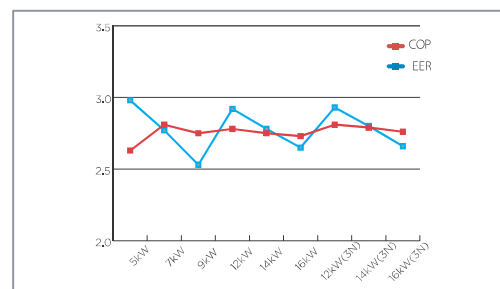
Integrated hydronic module with DC water pump and backup electric heater.



Energy Efficiency Mono System



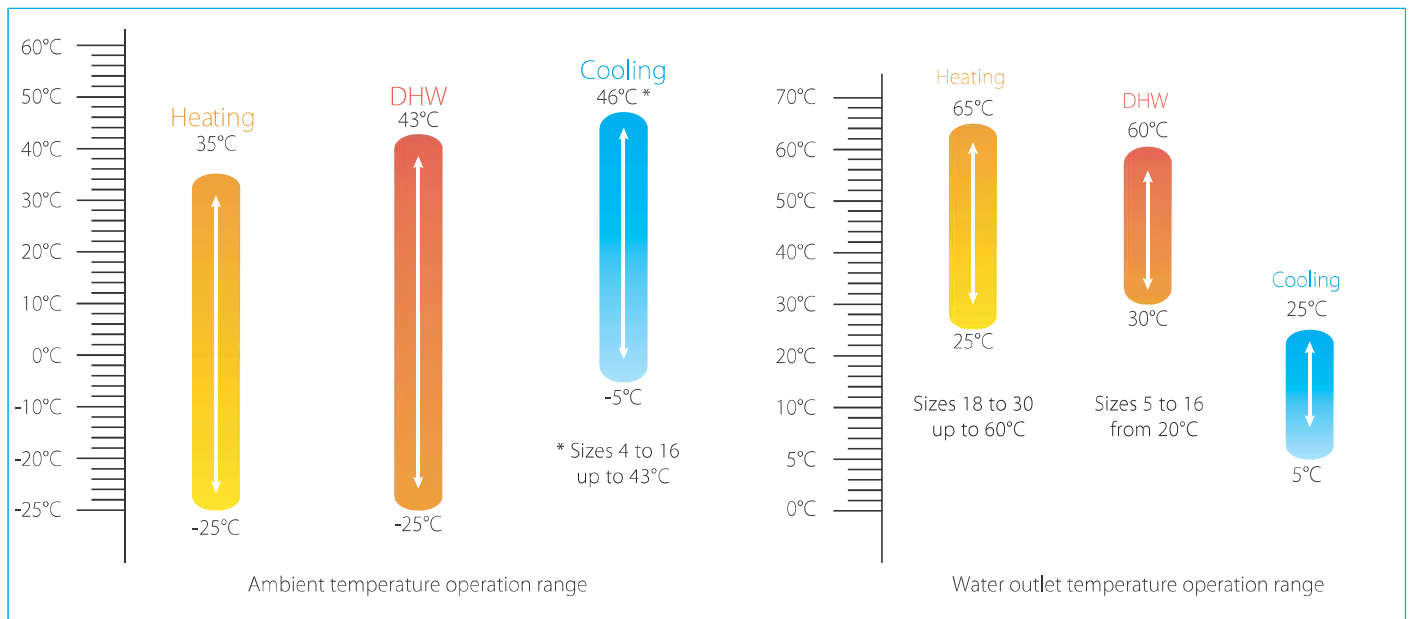
COP test conditions: ambient temp. 7°C; leaving water temp. 35°C
 EER test conditions: ambient temp. 35°C; leaving water temp. 18°C



COP test conditions: ambient temp. 7°C; leaving water temp. 55°C
 EER test conditions: ambient temp. 35°C; leaving water temp. 7°C

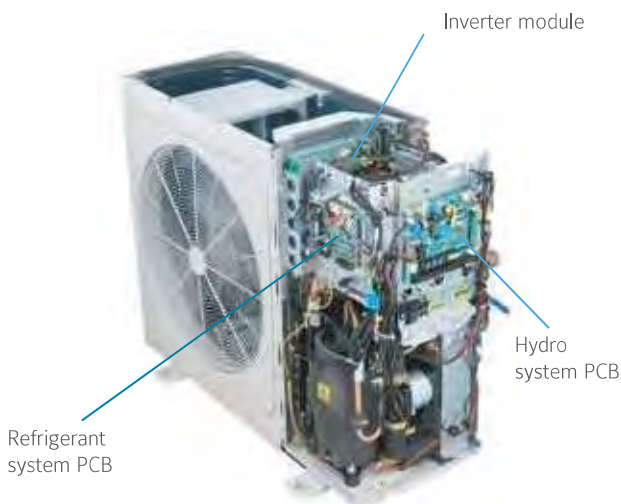
Additional benefits of Mono system

- Heating, cooling and domestic hot water: a total heat solution.
- Delivers 100% heating capacity at -7°C due to the large heat exchanger and compressor.
- Supplemental electric heater is customizable for additional heating during extremely cold weather. The electric backup heater is an integrated option on models up to size 16. For three phase type backup electric heater, 3/6kW can be achieved by changing DIP switch when heat pump is equipped with 9kW.
- Compatible with additional heat sources including solar water heaters and boilers. Additional heat sources can work together with YKF heat pump or be designated separately for space heating or domestic hot water dependent on the system control.
- Wide ambient and water outlet temperature operation ranges.



Easy installation and easy maintenance

- All hydronic components are located within the outdoor unit.
- Refrigerant system entirely contained within outdoor unit – no additional refrigerant piping required.
- Compact structure, easy for transportation and installation.
- Two-door design for easy access to internal components for easy maintenance.



Anti-explosion PCB is used to enhance the reliability because of R32 mild flammability classification.



Door 1: Access to hydronic components and electrical parts.
 Door 2: Access to refrigerant components and electrical parts.

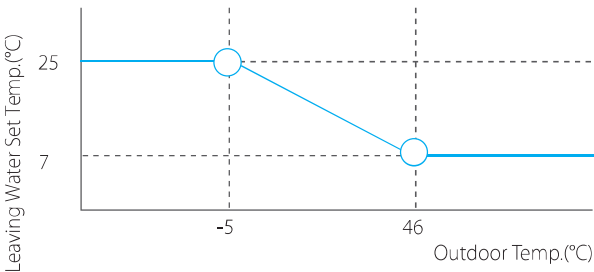
Flexible operation and more comfort

Weather dependent operation with climate correlation to ensure absolute comfort.

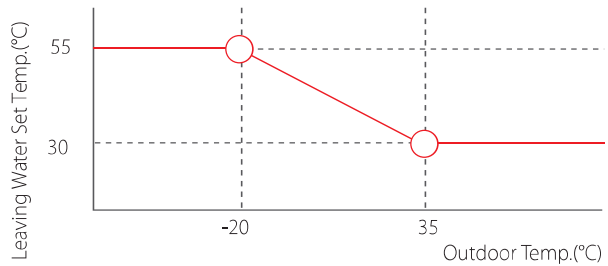
The system controller has 32 climate correlation curves to enable the system to react optimally for your local climate conditions. Once the curve is selected, the unit controls the outlet water temperature automatically according to the outdoor ambient temperature.

Totally there are 32 climate correlation curves for choice. Once the curve is selected, the unit set the outlet water temperature automatically according to the outdoor ambient temperature.

Cooling operation



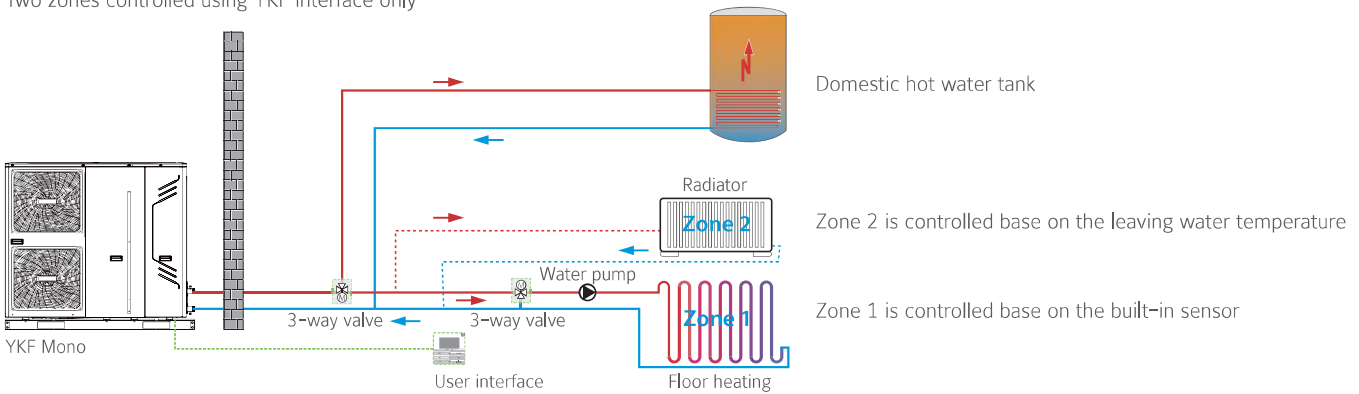
Heating operation



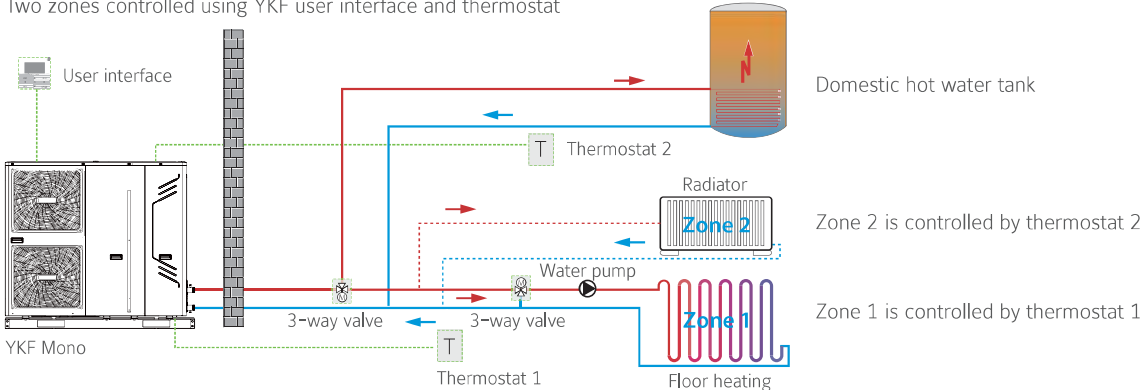
Two zones control more flexibility

Each zone temperature is separately controlled. Dual control reduces water pump operating time and saves energy.

Two zones controlled using YKF interface only



Two zones controlled using YKF user interface and thermostat



Priority setting function and multi modes choice



1. Only when the immersion heater of tank is available can the disinfection mode be used.

In addition, there are programs for special functions such as air purge, preheating for floor and floor dehumidification

Specifications



YKF Mono

Outdoor unit model			YKF04CNC	YKF05CNC	YKF07CNC	YKF09CNC	YKF12CNC	YKF14CNC	YK016CNC	YKF12CRC	YKF14CRC	YKF16CRC	
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50			
Heating ¹	Capacity	kW	4,20	6,50	8,40	10,00	12,12	14,10	16,00	12,12	14,10	16,00	
	Rated input	kW	0,82	1,23	1,66	2,13	2,49	3,00	3,56	2,49	3,00	3,56	
	COP		5,10	5,30	5,05	4,70	4,90	4,70	4,50	4,90	4,70	4,50	
Heating ²	Capacity	kW	4,30	6,60	8,50	10,20	12,50	14,50	16,20	12,50	14,50	16,20	
	Rated input	kW	1,13	1,65	2,24	2,80	3,38	4,09	4,70	3,38	4,09	4,70	
	COP		3,80	4,00	3,80	3,65	3,70	3,55	3,45	3,70	3,55	3,45	
Heating ³	Capacity	kW	4,40	6,30	8,20	9,40	12,00	14,00	16,00	12,00	14,00	16,00	
	Rated input	kW	1,49	1,97	2,60	3,03	4,00	4,75	5,61	4,00	4,75	5,61	
	COP		2,95	3,20	3,15	3,10	3,00	2,95	2,85	3,00	2,95	2,85	
Cooling ⁴	Capacity	kW	4,50	6,50	8,30	10,00	12,20	13,90	15,40	12,20	13,90	15,40	
	Rated input	kW	0,82	1,28	1,71	2,33	2,65	3,16	3,67	2,65	3,16	3,67	
	EER		5,50	5,10	4,85	4,30	4,60	4,40	4,20	4,60	4,40	4,20	
Cooling ⁵	Capacity	kW	4,70	5,50	7,40	9,00	11,60	13,40	14,00	11,60	13,40	14,00	
	Rated input	kW	1,36	1,69	2,35	3,10	3,74	4,58	4,83	3,74	4,57	4,83	
	EER		3,45	3,25	3,15	2,90	3,10	2,93	2,90	3,10	2,93	2,90	
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class	A+++										
	Water outlet at 55°C	class	A++										
Refrigerant	Type (GWP)		R32 (675)										
	Charged volume	kg	1,40	1,25				1,80					
Sound power Level ⁷		dB(A)	55	56*	58*	60*	63*	64*	64*	64*	64*	64*	
Unit dimension (W×D×H)		mm	1295x429x792				865 x 410 x 1040						
Packing dimension (W×D×H)		mm	1375x475x965				970 x 560 x 1190						
Net/Gross weight		kg	98 / 121	87 / 103			106 / 122			120 / 136			
Outdoor air temperature range	Cooling	°C	-5-43										
	Heating	°C	-25-35										
	DHW	°C	-25-43										
Water side heat exchanger			Plate type										
Water pump	Max. pump head	m	9										
Water side connection		mm	R1"					R5/4"					
Backup E-heater ⁸	Standard mounted	kW	/										
	Optional	kW	3	3/9	3/9	3/9	3/9	3/9	3/9	3/9	3/9	3/9	
	Capacity steps		1	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	
	Power supply	3 kW 9 kW	V/Ph/Hz	220-240/1/50 380-415/3/50									
Water temperature setting range	Cooling	°C	5-25										
	Heating	°C	25-65										
	DHW (tank)	°C	30-60	20-60									

1. Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C

2. Evaporator air in 7°C, 85% R.H., Condenser water in/out 40/45°C

3. Evaporator air in 7°C, 85% R.H., Condenser water in/out 47/55°C

4. Condenser air in 35°C. Evaporator water in/out 23/18°C

5. Condenser air in 35°C. Evaporator water in/out 12/7°C

6. Seasonal space heating energy efficiency class testes in average climate general conditions.

7. Testing standard: EN12102-1. * Cooling silent mode

8. Backup electric heater is built into all models. For three phase type backup electric heater, 3/6kW can be achieved by changing DIP switch when heat pump is equipped with 9kW.

9. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Specifications

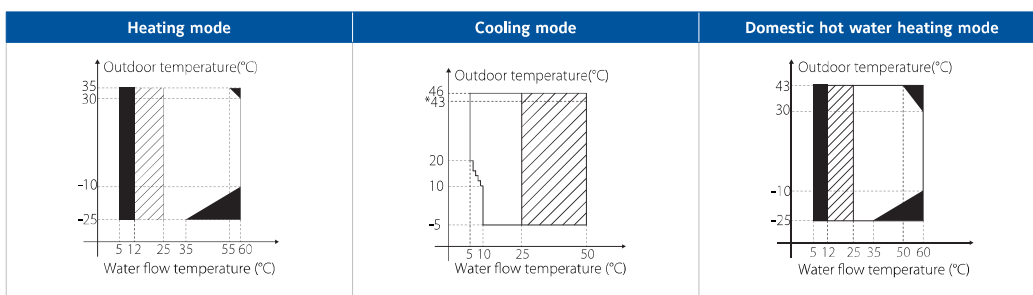


YKF Mono

Outdoor unit model			YKF18CRB	YKF22CRB	YKF26CRB	YKF30CRB	
Power supply	V/Ph/Hz	380-415/3/50					
Heating ¹	Capacity	kW	18.00	22.00	26.00	30.10	
	Rated input	kW	3.83	5.00	6.37	7.70	
	COP		4.70	4.40	4.08	3.91	
Heating ²	Capacity	kW	18.00	22.00	26.00	30.00	
	Rated input	kW	5.14	6.47	8.39	10.35	
	COP		3.50	3.40	3.10	2.90	
Heating ³	Capacity	kW	18.00	22.00	26.00	30.00	
	Rated input	kW	6.55	8.30	10.61	13.04	
	COP		2.75	2.65	2.45	2.30	
Cooling ⁴	Capacity	kW	18.50	23.00	27.00	31.00	
	Rated input	kW	3.90	5.00	6.28	7.75	
	EER		4.75	4.60	4.30	4.00	
Cooling ⁵	Capacity	kW	17.00	21.00	26.00	29.50	
	Rated input	kW	5.57	7.12	9.63	11.57	
	EER		3.05	2.95	2.70	2.55	
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class	A+++	A+++	A+++	A++	
	Water outlet at 55°C	class	A++	A++	A+	A+	
Refrigerant	Type (GWP)		R32 (675)				
	Charged volume	kg	5.0				
Sound power Level ⁷	dB(A)		71	73	75	77	
Unit dimension (W×D×H)	mm	1129 x 528 x 1558					
Packing dimension (W×D×H)	mm	1220 x 565 x 1735					
Net/Gross weight	kg	177 / 206					
Outdoor air temperature range	Cooling	°C	-5~46				
	Heating	°C	-25~35				
	DHW	°C	-25~43				
Water side heat exchanger		Plate type					
Water pump	Max. pump head	m	12				
Water side connection	mm	R5/4"					
Water temperature setting range	Cooling	°C	5~25				
	Heating	°C	25~60				
	DHW (tank)	°C	30~60				

1. Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C
2. Evaporator air in 7°C, 85% R.H., Condenser water in/out 40/45°C
3. Evaporator air in 7°C, 85% R.H., Condenser water in/out 47/55°C
4. Condenser air in 35°C. Evaporator water in/out 23/18°C
5. Condenser air in 35°C. Evaporator water in/out 12/7°C
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Testing standard: EN12102-1.
8. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Operating Limits



Abbreviations:
T4: Outdoor temperature (°C)
T1: Leaving water temperature (°C)

- Notes:
- Shaded areas indicate no heat pump operation (backup electric heater or auxiliary heat source only)
 - ▨ Water flow temperature drop or rise interval

*The maximum operating temperature of the 5/7/9kW model is 46°C

Specifications

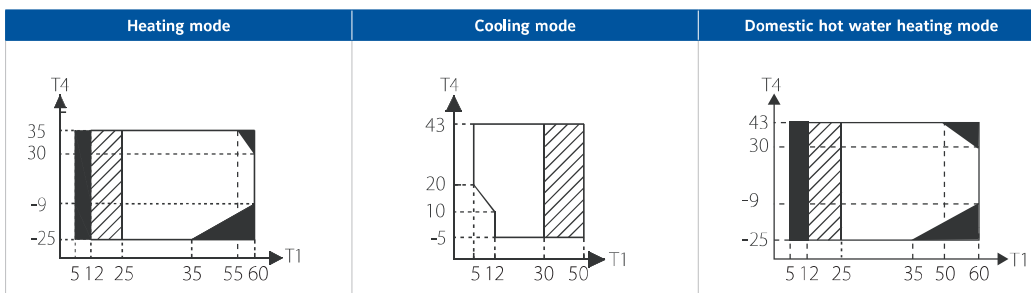


YKF Split + Hydronic box

Outdoor unit model			YKF04ANB	YKF06ANB	YKF08ANB	YKF10ANB	YKF12ANB	YKF14ANB	YK016ANB	YKF12ARB	YKF14ARB	YKF16ARB	
Indoor unit model			YKF60ANB			YKF100ANB			YKF160ANB				
Power supply		V/Ph/Hz	220-240/1/50						380-415/3/50				
Heating ¹	Capacity	kW	4,25	6,20	8,30	10,00	12,10	14,50	16,00	12,10	14,50	16,00	
	Rated input	kW	0,82	1,24	1,60	2,00	2,44	3,09	3,56	2,44	3,09	3,56	
	COP		5,20	5,00	5,20	5,00	4,95	4,70	4,50	4,95	4,70	4,50	
Heating ²	Capacity	kW	4,35	6,35	8,20	10,00	12,30	14,20	16,00	12,30	14,20	16,00	
	Rated input	kW	1,14	1,69	2,08	2,63	3,24	3,89	4,44	3,24	3,89	4,44	
	COP		3,80	3,75	3,95	3,80	3,80	3,65	3,60	3,80	3,65	3,60	
Heating ³	Capacity	kW	4,40	6,00	7,50	9,50	12,00	13,80	16,00	12,00	13,80	16,00	
	Rated input	kW	1,49	2,00	2,36	3,06	3,87	4,60	5,52	3,87	4,60	5,52	
	COP		2,95	3,00	3,18	3,10	3,10	3,00	2,90	3,10	3,00	2,90	
Cooling ⁴	Capacity	kW	4,50	6,55	8,40	10,00	12,00	13,50	14,90	12,00	13,50	14,90	
	Rated input	kW	0,81	1,34	1,66	2,08	3,00	3,75	4,38	3,00	3,75	4,38	
	EER		5,55	4,90	5,05	4,80	4,00	3,60	3,40	4,00	3,60	3,40	
Cooling ⁵	Capacity	kW	4,70	7,00	7,40	8,20	11,60	12,70	14,00	11,60	12,70	14,00	
	Rated input	kW	1,36	2,33	2,19	2,48	4,22	4,98	5,71	4,22	4,98	5,71	
	EER		3,45	3,00	3,38	3,30	2,75	2,55	2,45	2,75	2,55	2,45	
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class							A+++				
	Water outlet at 55°C	class							A++				
Refrigerant	Type (GWP)								R32 (675)				
	Charged volume	kg	1,50			1,65			1,84				
Sound power Level ⁸	dB(A)		56	58	59	60	64	65	68	64	65	68	
Unit dimension (WxDxH)	mm		1008 x 426 x 712			1118 x 523 x 865							
Packing dimension (WxDxH)	mm		1065 x 485 x 800			1180 x 560 x 890							
Net/Gross weight	kg		58 / 64		77 / 88		96 / 110			112 / 125			
Outdoor air temperature range	Cooling	°C							-5-43				
	Heating	°C							-25-35				
	DHW	°C							-25-43				
INDOOR UNIT													
Unit dimension (WxDxH)	mm								420 x 790 x 270				
Packing dimension (WxDxH)	mm								525 x 1050 x 360				
Net/Gross weight	kg		37 / 43						39 / 45				
Water side connection	mm								R1"				
Water pump	Max. pump head	m							9				
	Standard mounted	kW							/				
	Optional	kW							3/9				
Backup E-heater ⁹	Capacity steps								1/3				
	Power supply	3 kW							220-240/1/50				
		9 kW	V/Ph/Hz								380-415/3/50		
Water temperature setting range	Cooling	°C							5-25				
	Heating	°C							25-65				
	DHW (tank)	°C							30-60				
Sound power Level ⁸	dB(A)		38	38	42	42	43	43	43	43	43	43	

1. Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C
2. Evaporator air in 7°C, 85% R.H., Condenser water in/out 40/45°C
3. Evaporator air in 7°C, 85% R.H., Condenser water in/out 47/55°C
4. Condenser air in 35°C, Evaporator water in/out 23/18°C
5. Condenser air in 35°C, Evaporator water in/out 12/7°C
6. Seasonal space heating energy efficiency class testes in average climate general conditions.
7. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014
8. Testing standard: EN12102-1.
9. For three phase type backup electric heater, 3/6kW can be achieved by changing DIP switch when hydronic box is equipped with 9kW.

Operating Limits



Abbreviations:
T4: Outdoor temperature (°C)
T1: Leaving water temperature (°C)

Notes:

- Shaded areas indicate no heat pump operation (backup electric heater or auxiliary heat source only)
- ▨ Water flow temperature drop or rise interval

Specifications

YKF Split + Hydronic box with water tank



Outdoor unit model		YKF04ANB	YKF06ANB	YKF08ANB	YKF10ANB		
Indoor unit model		YKF100/190ANB					
Domestic hot water	Tapping profile according EN16147		L				
	Water heating energy efficiency class ⁽¹⁾	Average climate	class	A+	A+	A+	A+
		Warm climate	class	A+	A+	A+	A+
			COP	3.10	3.10	3.02	3.02
Cold climate	class	A	A	A	A		
	COP	2.50	2.50	2.61	2.61		
Heating	A7W35 ⁽²⁾	Capacity	kW	4,25	6,20	8,30	10,00
		Rated input	kW	0,82	1,24	1,60	2,00
		COP	5,20	5,00	5,20	5,00	
	A7W45 ⁽³⁾	Capacity	kW	4,35	6,35	8,20	10,00
		Rated input	kW	1,14	1,69	2,08	2,63
		COP	3,80	3,75	3,95	3,80	
Cooling	A35W18 ⁽⁴⁾	Capacity	kW	4,50	6,55	8,40	10,00
		Rated input	kW	0,81	1,34	1,66	2,08
		EER	5,55	4,90	5,05	4,80	
	A35W7 ⁽⁵⁾	Capacity	kW	4,70	7,00	7,40	8,20
		Rated input	kW	1,36	2,33	2,19	2,48
		EER	3,45	3,00	3,38	3,30	
Space heating	Seasonal space heating energy efficiency class ⁽⁶⁾	Water outlet at 35°C	class	A+++	A+++	A+++	A+++
		Water outlet at 55°C	class	A++	A++	A++	A++
Indoor unit sound power Level ⁽⁷⁾		dB(A)	38		40		
Outdoor unit sound power Level ⁽⁷⁾		dB(A)	56	58	59	60	
Indoor unit	Power supply		V/Ph/Hz	220-240/1/50			
	Rated input		W	3095			
	DHW Tank	Type		Stainless steel			
		Material		SUS 316L			
		Water volume	L	190			
		Maximum water temperature	°C	70			
	Insulation		Material	Polyurethane (Cyclopentane)			
	Heat exchanger			Plate heat exchanger			
	Backup heater	Standard mounted	kW	3			
		Capacity steps		1			
	Water Pump	Type		DC Inverter			
		Max. head	m	9			
	Water piping connections	Water circuit	Inlet	R1"			
			Outlet	R1"			
		DHW tank water circuit	Cold water inlet	°C	R3/4"		
			Hot water outlet	°C	R3/4"		
			Recirculation	°C	R3/4"		
Unit dimension (WxDxH)		mm	600 x 600 x 1683				
Packing dimension (WxDxH)		mm	730 x 730 x 1920				
Net/Gross weight		kg	140 / 161				
Ambient temperature range		°C	5-35				
Water outlet temperature	Heating (heating pump)	°C	25-65				
	Cooling	°C	5-25				
	Domestic hot water	°C	30-60				
Outdoor Unit	Power supply		V/Ph/Hz	220-240/1/50			
	Unit dimension (WxDxH)		mm	1008 x 712 x 426		1118 x 865 x 523	
	Packing dimension (WxDxH)		mm	1065 x 810 x 485		1190 x 970 x 560	
	Net/Gross weight		kg	60 / 65,5		78,5 / 92	
	Refrigerant	Type(GWP)		R32 (675)			
		Charged volume	kg	1.50		1.65	
		Refrigerant to be added	g/m	20			
	Refrigerant piping connections	Liquid side	mm	Ø 6.35		Ø 9,52	
		Gas side	mm	Ø 15.9		Ø 15.9	
		Max. piping length	m	30			
		Max. difference in height	m	20			
		Drain connection		DN32			
	Ambient temperature range	Heating	°C	-25-35			
		Cooling	°C	-5-43			
Domestic hot water		°C	-25-43				

(1) According to EN16147/2017; EU No:812/2013

(2) DB/WB 7/6°C, LWT 35°C (ΔT=5°C)

(3) DB/WB 7/6°C, LWT 45°C (ΔT=5°C)

(4) DB 35°C, LWT 18°C (ΔT=5°C)

(5) DB 35°C, LWT 7°C (ΔT=5°C)

(6) According to EN14511/2018; EN14825/2018; EU No:811/2013

(7) Sound power in heating mode, measured according to the EN 12102 under conditions of the EN 14825

(8) Certifications plan to come with the launch of the product.

Specifications



YKF Split + Hydronic box with water tank

Outdoor unit model				YKF04ANB	YKF06ANB	YKF08ANB	YKF10ANB	
Indoor unit model				YKF100/240ANB				
Domestic hot water	Tapping profile according EN16147			XL				
	Water heating energy efficiency class ⁽¹⁾	Average climate	class	A+	A+	A+	A+	
		Warm climate	class	A+	A+	A+	A+	
			COP	3.34	3.34	3.36	3.36	
	Cold climate	class	A	A	A	A		
		COP	2.63	2.63	2.72	2.72		
Heating	A7W35 ⁽²⁾	Capacity	kW	4,25	6,20	8,30	10,00	
		Rated input	kW	0,82	1,24	1,60	2,00	
		COP		5,20	5,00	5,20	5,00	
	A7W45 ⁽³⁾	Capacity	kW	4,35	6,35	8,20	10,00	
		Rated input	kW	1,14	1,69	2,08	2,63	
		COP		3,80	3,75	3,95	3,80	
Cooling	A35W18 ⁽⁴⁾	Capacity	kW	4,50	6,55	8,40	10,00	
		Rated input	kW	0,81	1,34	1,66	2,08	
		EER		5,55	4,90	5,05	4,80	
	A35W7 ⁽⁵⁾	Capacity	kW	4,70	7,00	7,40	8,20	
		Rated input	kW	1,36	2,33	2,19	2,48	
		EER		3,45	3,00	3,38	3,30	
Space heating	Seasonal space heating energy efficiency class ⁽⁶⁾	Water outlet at 35°C	class	A+++	A+++	A+++	A+++	
		Water outlet at 55°C	class	A++	A++	A++	A++	
Indoor unit sound power Level ⁽⁷⁾				dB(A)		38		
Outdoor unit sound power Level ⁽⁷⁾				dB(A)		56		
Indoor unit	Power supply		V/Ph/Hz	220-240/1/50				
	Rated input		W	3095				
	DHW Tank	Type		Stainless steel				
		Material		SUS 316L				
		Water volume	L	240				
		Maximum water temperature	°C	70				
	Insulation		Material	Polyurethane (Cyclopentane)				
	Heat exchanger			Plate heat exchanger				
	Backup heater	Standard mounted		kW	3			
		Capacity steps			1			
	Water Pump	Type			DC Inverter			
		Max. head		m	9			
	Water piping connections	Water circuit	Inlet		R1"			
			Outlet		R1"			
		DHW tank water circuit	Cold water inlet	°C	R3/4"			
			Hot water outlet	°C	R3/4"			
	Recirculation		°C	R3/4"				
	Unit dimension (WxDxH)		mm	600 x 600 x 1943				
	Packing dimension (WxDxH)		mm	730 x 730 x 2180				
	Net/Gross weight		kg	157 / 178				
Ambient temperature range		°C	5-35					
Water outlet temperature	Heating (heating pump)		°C	25-65				
	Cooling		°C	5-25				
	Domestic hot water		°C	30-60				
Outdoor Unit	Power supply		V/Ph/Hz	220-240/1/50				
	Unit dimension (WxDxH)		mm	1008 x 712 x 426		1118 x 865 x 523		
	Packing dimension (WxDxH)		mm	1065 x 810 x 485		1190 x 970 x 560		
	Net/Gross weight		kg	60 / 65,5		78,5 / 92		
	Refrigerant	Type(GWP)			R32 (675)			
		Charged volume		kg	1.50		1.65	
		Refrigerant to be added		g/m	20		38	
	Refrigerant piping connections	Liquid side		mm	Ø 6,35		Ø 9,52	
		Gas side		mm	Ø 15,9		Ø 15,9	
		Max. piping length		m	30			
		Max. difference in height		m	20			
	Drain connection			DN32				
	Ambient temperature range	Heating		°C	-25-35			
		Cooling		°C	-5-43			
		Domestic hot water		°C	-25-43			

(1) According to EN16147/2017;EU No:812/2013

(2) DB/WB 7/6°C, LWT 35°C (ΔT=5°C)

(3) DB/WB 7/6°C, LWT 45°C (ΔT=5°C)

(4) DB 35°C, LWT 18°C (ΔT=5°C)

(5) DB 35°C, LWT 7°C (ΔT=5°C)

(6) According to EN14511/2018; EN14825/2018; EU No:811/2013

(7) Sound power in heating mode, measured according to the EN 12102 under conditions of the EN 14825

(8) Certifications plan to come with the launch of the product.

Specifications



YKF Split + Hydronic box with water tank

Outdoor unit model				YKF12ANB	YKF14ANB	YKF16ANB	YKF12ARB	YKF14ARB	YKF16ARB	
Indoor unit model				YKF100/240ANB						
Domestic hot water	Tapping profile according EN16147			XL						
	Water heating energy efficiency class ⁽¹⁾	Average climate	class	A+	A+	A+	A+	A+	A+	
		Warm climate	class	A+	A+	A+	A+	A+	A+	
			COP	3.00	3.00	3.00	3.00	3.00	3.00	
Cold climate	class	A	A	A	A	A	A			
	COP	2.24	2.24	2.24	2.24	2.24	2.24			
	Capacity		kW	12,10	14,50	16,00	12,10	14,50	16,00	
Heating	A7W35 ⁽²⁾	Rated input	kW	2,44	3,09	3,56	2,44	3,09	3,56	
		COP	4,95	4,70	4,50	4,95	4,70	4,50		
		Capacity		kW	12,30	14,20	16,00	12,30	14,20	16,00
	A7W45 ⁽³⁾	Rated input	kW	3,24	3,89	4,44	3,24	3,89	4,44	
COP		3,80	3,65	3,60	3,80	3,65	3,60			
Capacity		kW	12,00	13,50	14,90	12,00	13,50	14,90		
Cooling	A35W18 ⁽⁴⁾	Rated input	kW	3,00	3,75	4,38	3,00	3,75	4,38	
		EER	4,00	3,60	3,40	4,00	3,60	3,40		
		Capacity		kW	11,60	12,70	14,00	11,60	12,70	14,00
	A35W7 ⁽⁵⁾	Rated input	kW	4,22	4,98	5,71	4,22	4,98	5,71	
EER		2,75	2,55	2,45	2,75	2,55	2,45			
Capacity		kW	12,00	13,50	14,90	12,00	13,50	14,90		
Space heating	Seasonal space heating energy efficiency class ⁽⁶⁾	Water outlet at 35°C	class	A+++	A+++	A+++	A+++	A+++	A+++	
		Water outlet at 55°C	class	A++	A++	A++	A++	A++	A++	
Indoor unit sound power Level ⁽⁷⁾			dB(A)	42	44	42	44	44		
Outdoor unit sound power Level ⁽⁷⁾			dB(A)	64	65	68	64	65	68	
Indoor unit	Power supply		V/Ph/Hz	220-240/1/50						
	Rated input		W	3095						
	DHW Tank	Type		Stainless steel						
		Material		SUS 316L						
		Water volume	L	240						
		Maximum water temperature	°C	70						
	Insulation		Material	Polyurethane (Cyclopentane)						
	Heat exchanger			Plate heat exchanger						
	Backup heater	Standard mounted	kW	3						
		Capacity steps		1						
	Water Pump	Type		DC Inverter						
		Max. head	m	9						
	Water piping connections	Water circuit	Inlet	R1"						
			Outlet	R1"						
		DHW tank water circuit	Cold water inlet	°C	R3/4"					
			Hot water outlet	°C	R3/4"					
	Recirculation		°C	R3/4"						
Unit dimension (WxDxH)		mm	600 x 600 x 1943							
Packing dimension (WxDxH)		mm	730 x 730 x 2180							
Net/Gross weight		kg	159 / 180							
Ambient temperature range		°C	5-35							
Water outlet temperature	Heating (heating pump)	°C	25-65							
	Cooling	°C	5-25							
	Domestic hot water	°C	30-60							
Power supply		V/Ph/Hz	220-240/1/50			380-415/3/50				
Unit dimension (WxDxH)		mm	1118 x 865 x 523							
Packing dimension (WxDxH)		mm	1190 x 970 x 560							
Net/Gross weight		kg	100 / 113,5			116 / 129,5				
Refrigerant	Type(GWP)		R32 (675)							
	Charged volume	kg	1.84							
	Refrigerant to be added	g/m	38							
	Liquid side	mm	Ø 9,52							
Refrigerant piping connections	Gas side	mm	Ø 15,9							
	Max. piping length	m	30							
	Max. difference in height	m	20							
	Drain connection			DN32						
Ambient temperature range	Heating	°C	-25-35							
	Cooling	°C	-5-43							
	Domestic hot water	°C	-25-43							

(1) According to EN16147/2017; EU No:812/2013
 (2) DB/WB 7/6°C, LWT 35°C (ΔT=5°C)
 (3) DB/WB 7/6°C, LWT 45°C (ΔT=5°C)
 (4) DB 35°C, LWT 18°C (ΔT=5°C)
 (5) DB 35°C, LWT 7°C (ΔT=5°C)
 (6) According to EN14511/2018; EN14825/2018; EU No:811/2013
 (7) Sound power in heating mode, measured according to the EN 12102 under conditions of the EN 14825
 (8) Certifications plan to come with the launch of the product.

Heat pumps with standard temperature



YVAG
Air to water HP
Scroll compr. / R410A
Hot water up to **52°C**
H. cap.: 10.9 to 18.4 kW
Min leaving water temp. down to -10°C.
Qualified as hermetically sealed equipment



YMPA
Air to water HP
Heat Pump Product of the Year (ACR Awards)
Scroll / R410A & R454B
Hot water up to **55°C**
Heat. cap.: 50 to 254 kW



YLPB
Air to water HP
Scroll compr. / R410A
Hot water up to **55°C**
Heating capacity: 344 to 653 kW
Heat recovery option available



YHA
Air to water HP
4 pipe system
Scroll / R410A & R454B
Hot water up to **60°C**
Heat. cap.: 22 to 464 kW
Heating mode ambient operation down to -20°C



YLZ
Air to water HP E.V.I.
4 pipe system
Scroll E.V.I / R410A Duct ESP fans (option)
Hot water up to **65°C**
Heat. cap.: 25 to 210 kW
Heating mode ambient operation down to -20°C



YMWA
Water to water HP
Scroll compr. / R410A
Hot water up to **55°C**
Heating capacity: 24 to 212 kW



YWH
Water to water HP
Scroll compr. / R134a
Hot water up to **78°C**
Heating capacity: 38 to 273 kW



YCSSE
Water to water HP
Screw compr. / R134a (R513A on request)
Hot water up to **60°C**
Heating capacity: 170 to 300 kW



YCWL
Water to water HP
Scroll compr. / R410A
Hot water up to **50°C**
Heating capacity: 200 to 700 kW



YLCSS
Water to water HP
Twin screw / R134a (R513A on request)
Hot water up to **65°C**
Heating capacity: 440 to 990 kW



YVWA
Water to water heat pump
VSD Screw compr. / R513A
Hot water up to **63°C**
Heating cap.: 600 to 1,000 kW



YVWH
Water to water heat pump
VSD Screw compr./ R1234ze
Hot water up to **50°C**
Heating cap.: 315 to 1,250 kW



YMC²
Water to water heat pump
VSD Centrifugal compr. Mag. bearings / R134a & R513A
Hot water up to **50°C**
Heating cap.: 900 to 4,000 kW



YK
Water to water heat pump
VSD Centrifugal compressor R134a & R513A
Hot water up to **50°C**
Heat. cap: 1,200 to 13,000 kW



HeatPAC recip Variable-Speed Drive
Reciprocating compr. / R717
Hot water up to **70°C**
Heating cap. 300 to 2000 kW
Hot water up to **90°C (HPX)**
Heating cap. up to 1500 kW



DualPAC recip 2-stages Variable-Speed Drive
Reciprocating compr. / R717
Hot water up to **70°C**
Heating cap. 400 to 3000 kW
Hot water up to **90°C (HPX)**
Heating cap. up to 1850 kW



YHAP
Single stage absorption
Steam, Gas or Hot Water driven / R718
Hot water up to **95°C**
Heat. cap.: 900 to 40,000 kW

Government sponsored incentives in Europe for YORK Heat Pumps