

Water-to-Water Heat Pumps

R407C

Description/Model Number	RTWW023 SKS-DQ-1	RTWW023 SKV-DQ-1	RTWW027 SKS-DQ-1	RTWW027 SKV-DQ-1	RTWW037 SKS-DQ-1	RTWW037 SKV-DQ-1	RTWW049 SKS-DQ-1	RTWW049 SKV-DQ-1
ELECTRICAL INPUT								
Voltage/Phase	380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz	
Full Load / Locked Rotor (Amps Per Phase)	11.2 FLA / 74 LRA		13.6 FLA / 101 LRA		16.6 FLA / 111 LRA		21.8 FLA / 118 LRA	
Min. Circuit Size	20.0 Amps		20.0 Amps		25.0 Amps		40.0 Amps	
Refrigerant	R407C		R407C		R407C		R407C	
Refrigeration effect	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling
Nominal capacity	23.62 kW	18.94 kW	27.30 kW	21.82 kW	36.98 kW	29.94 kW	49.63 kW	40.26 kW
Power input	4.68 kW		5.48 kW		7.04 kW		9.37 kW	
COP	5.05 COP	4.05 COP	4.98 COP	3.98 COP	5.25 COP	4.25 COP	5.30 COP	4.30 COP
Noise Level	59 dBa @ 3 m		59 dBa @ 3 m		59 dBa @ 3 m		61 dBa @ 3 m	
Rated Load Amps @ 10°C SST / 51°C SCT	8.4 Amps		10.4 Amps		13.1 Amps		16.6 Amps	
TECHNICAL DATA								
	Compressor		Compressor		Compressor		Compressor	
Make / Type	Copeland / Scroll 20012		Copeland / Scroll 20012		Copeland / Scroll 20016		Copeland / Scroll 20018	
Number Per Unit	1		1		1		1	
FLA (Full Load Amps)	11.2 Amps		13.6 Amps		16.6 Amps		21.8 Amps	
Voltage / Phase	380 - 415 / 3		380 - 415 / 3		380 - 415 / 3		380 - 415 / 3	
Pole/RPM	2/2,900		2/2,900		2/2,900		2/2,900	
HEAT EXCHANGER (Water Side)								
	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)
Type of Water Tube	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall
Design	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube
Flow Rate Excl. By Pass	0.94 L/s	0.91 L/s	1.09 L/s	1.04 L/s	1.47 L/s	1.43 L/s	1.97 L/s	1.93 L/s
Max. Outlet Water Temp	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A
Min. Outlet Water Temp	N/A	6°C	N/A	6°C	N/A	6°C	N/A	6°C
Design Pressure Drop	80 kPa / 50 kPa	80 kPa	50 kPa		50 kPa		80 kPa / 50 kPa	80 kPa
Max. Operating Pressure	2,450 kPa		2,450 kPa		2,450 kPa		2,450 kPa	

Water-to-Water Heat Pumps

R407C

Description/Model Number	RTWW064 SKS-DQ-1	RTWW064 SKV-DQ-1	RTWW085 SKS-DQ-1	RTWW085 SKV-DQ-1	RTWW098 SKS-DQ-1	RTWW098 SKV-DQ-1	RTWW128 SKS-DQ-1	RTWW128 SKV-DQ-1
ELECTRICAL INPUT								
Voltage/Phase	380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz		380 - 415 Volts / 3 Phase / 50 Hz	
Full Load / Locked Rotor (Amps Per Phase)	31.2 FLA / 174 LRA		37.6 FLA / 225 LRA		43.6 FLA / 118 LRA		62.4 FLA / 174 LRA	
Min. Circuit Size	50.0 Amps		50.0 Amps		63.0 Amps		80.0 Amps	
Refrigerant	R407C		R407C		R407C		R407C	
Refrigeration effect	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling
Nominal capacity	64.01 kW	51.32 kW	84.81 kW	67.96 kW	99.26 kW	80.52 kW	128.02 kW	102.64 kW
Power input	12.69 kW		16.85 kW		18.74 kW		25.38 kW	
COP	5.05 COP	4.05 COP	5.03 COP	4.03 COP	5.30 COP	4.30 COP	5.04 COP	4.04 COP
Noise Level	61 dBa @ 3 m		61 dBa @ 3 m		61 dBa @ 3 m		61 dBa @ 3 m	
Rated Load Amps @ 10°C SST / 51°C SCT	25.3 Amps		28.4 Amps		33.2 Amps		50.6 Amps	
TECHNICAL DATA								
	Compressor		Compressor		Compressor		Compressor	
Make / Type	Copeland / Scroll 20056		Copeland / Scroll 20092		Copeland / Scroll 20018		Copeland / Scroll 20056	
Number Per Unit	1		1		2		2	
FLA (Full Load Amps)	31.2 Amps		37.6 Amps		21.8 Amps		31.2 Amps	
Voltage / Phase	380 - 415 / 3		380 - 415 / 3		380 - 415 / 3		380 - 415 / 3	
Pole/RPM	2/2,900		2/2,900		2/2,900		2/2,900	
HEAT EXCHANGER (Water Side)								
	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)	Hot Side (Condensor)	Cold Side (Evaporator)
Type of Water Tube	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall	Single / Double Wall	Single Wall
Design	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube	Shell & Tube / Co-axial	Shell & Tube
Flow Rate Excl. By Pass	2.55 L/s	2.46 L/s	3.37 L/s	3.27 L/s	3.95 L/s	3.85 L/s	5.09 L/s	4.91 L/s
Max. Outlet Water Temp	61°C	N/A	61°C	N/A	61°C	N/A	61°C	N/A
Min. Outlet Water Temp	N/A	6 °C	N/A	6 °C	N/A	6 °C	N/A	6 °C
Design Pressure Drop	50 kPa		80 kPa / 50 kPa	80 kPa	80 kPa / 50 kPa	80 kPa	50 kPa	
Max. Operating Pressure	2,450 kPa		2,450 kPa		2,450 kPa		2,450 kPa	



Water-to-Water Heat Pumps COP Table

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	17.31 kW 3.70 COP	18.74 kW 4.01 COP	20.26 kW 4.34 COP	21.91 kW 4.69 COP	23.62 kW 5.05 COP	27.07 kW 5.77 COP
50 °C	16.93 kW 3.17 COP	18.34 kW 3.43 COP	19.81 kW 3.71 COP	21.38 kW 4.00 COP	22.98 kW 4.30 COP	26.30 kW 4.93 COP
55 °C	16.56 kW 2.81 COP	17.92 kW 3.04 COP	19.35 kW 3.28 COP	20.90 kW 3.54 COP	22.50 kW 3.81 COP	25.74 kW 4.36 COP
60 °C	16.12 kW 2.52 COP	17.55 kW 2.75 COP	18.99 kW 2.98 COP	20.49 kW 3.23 COP	22.05 kW 3.47 COP	25.18 kW 3.97 COP

RTWW023

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	21.11 kW 3.91 COP	22.50 kW 4.15 COP	23.98 kW 4.42 COP	25.61 kW 4.70 COP	27.30 kW 4.98 COP	30.70 kW 5.58 COP
50 °C	20.69 kW 3.39 COP	22.00 kW 3.60 COP	23.39 kW 3.83 COP	24.94 kW 4.07 COP	26.55 kW 4.32 COP	29.77 kW 4.83 COP
55 °C	20.39 kW 3.02 COP	21.63 kW 3.20 COP	22.95 kW 3.40 COP	24.42 kW 3.62 COP	25.95 kW 3.84 COP	29.01 kW 4.30 COP
60 °C	20.01 kW 2.76 COP	21.32 kW 2.94 COP	22.65 kW 3.12 COP	24.05 kW 3.31 COP	25.50 kW 3.51 COP	28.48 kW 3.92 COP

RTWW027

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	29.12 kW 4.15 COP	30.91 kW 4.40 COP	32.80 kW 4.67 COP	34.85 kW 4.95 COP	36.98 kW 5.25 COP	41.37 kW 5.86 COP
50 °C	28.47 kW 3.62 COP	30.17 kW 3.84 COP	31.96 kW 4.06 COP	33.92 kW 4.31 COP	35.96 kW 4.57 COP	40.09 kW 5.10 COP
55 °C	27.95 kW 3.26 COP	29.58 kW 3.44 COP	31.30 kW 3.64 COP	33.16 kW 3.86 COP	35.09 kW 4.08 COP	39.03 kW 4.54 COP
60 °C	27.42 kW 2.98 COP	29.13 kW 3.17 COP	30.85 kW 3.35 COP	32.65 kW 3.55 COP	34.50 kW 3.75 COP	38.31 kW 4.16 COP

RTWW037

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	38.87 kW 4.16 COP	41.35 kW 4.43 COP	43.94 kW 4.70 COP	46.73 kW 4.99 COP	49.63 kW 5.30 COP	55.43 kW 5.90 COP
50 °C	37.78 kW 3.59 COP	40.19 kW 3.82 COP	42.71 kW 4.05 COP	45.38 kW 4.30 COP	48.10 kW 4.55 COP	53.69 kW 5.08 COP
55 °C	36.92 kW 3.18 COP	39.24 kW 3.38 COP	41.65 kW 3.59 COP	44.23 kW 3.81 COP	46.90 kW 4.04 COP	52.27 kW 4.51 COP
60 °C	35.87 kW 2.87 COP	38.32 kW 3.07 COP	40.80 kW 3.26 COP	43.35 kW 3.47 COP	45.94 kW 3.68 COP	51.21 kW 4.10 COP

RTWW049



Water-to-Water Heat Pumps COP Table

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	50.11 kW 3.98 COP	53.29 kW 4.23 COP	56.64 kW 4.49 COP	60.27 kW 4.76 COP	64.01 kW 5.04 COP	71.60 kW 5.61 COP
50 °C	48.68 kW 3.45 COP	51.75 kW 3.66 COP	54.97 kW 3.89 COP	58.45 kW 4.13 COP	62.04 kW 4.38 COP	69.28 kW 4.88 COP
55 °C	47.59 kW 3.08 COP	50.53 kW 3.26 COP	53.65 kW 3.46 COP	57.00 kW 3.68 COP	60.40 kW 3.90 COP	67.40 kW 4.35 COP
60 °C	46.35 kW 2.80 COP	49.46 kW 2.98 COP	52.60 kW 3.17 COP	55.86 kW 3.36 COP	59.20 kW 3.56 COP	66.00 kW 3.96 COP

RTWW064

Hot Water Out °C	Cold Water in °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	66.58 kW 4.02 COP	70.73 kW 4.26 COP	75.14 kW 4.50 COP	79.91 kW 4.76 COP	84.81 kW 5.03 COP	95.88 kW 5.64 COP
50 °C	65.13 kW 3.50 COP	69.12 kW 3.70 COP	73.33 kW 3.92 COP	77.90 kW 4.14 COP	82.62 kW 4.37 COP	93.26 kW 4.89 COP
55 °C	64.10 kW 3.14 COP	67.90 kW 3.32 COP	71.95 kW 3.50 COP	76.37 kW 3.70 COP	80.90 kW 3.91 COP	91.21 kW 4.37 COP
60 °C	62.86 kW 2.86 COP	66.93 kW 3.04 COP	71.05 kW 3.21 COP	75.35 kW 3.40 COP	79.76 kW 3.58 COP	89.79 kW 4.00 COP

RTWW085

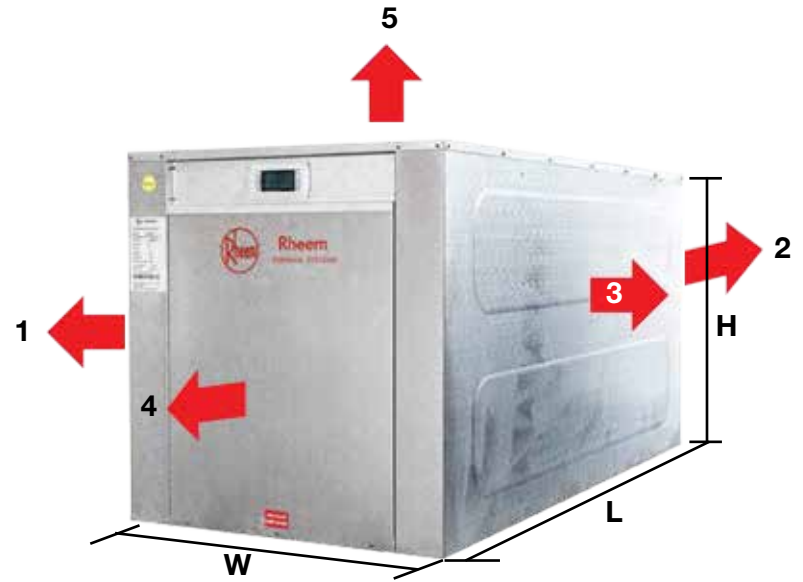
Hot Water Out °C	Cold Water in °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	77.74 kW 4.16 COP	82.69 kW 4.43 COP	87.87 kW 4.70 COP	93.47 kW 4.99 COP	99.26 kW 5.30 COP	110.86 kW 5.90 COP
50 °C	75.55 kW 3.59 COP	80.38 kW 3.82 COP	85.42 kW 4.05 COP	90.76 kW 4.30 COP	96.20 kW 4.55 COP	107.38 kW 5.08 COP
55 °C	73.84 kW 3.18 COP	78.48 kW 3.38 COP	83.30 kW 3.59 COP	88.47 kW 3.81 COP	93.80 kW 4.04 COP	104.54 kW 4.51 COP
60 °C	71.74 kW 2.87 COP	76.63 kW 3.07 COP	81.60 kW 3.26 COP	86.71 kW 3.47 COP	91.88 kW 3.68 COP	102.42 kW 4.10 COP

RTWW098

Hot Water Out °C	Cold Water In °C					
	12 °C	14 °C	16 °C	18 °C	20 °C	35 °C
45 °C	100.22 kW 3.98 COP	106.58 kW 4.23 COP	113.28 kW 4.49 COP	120.54 kW 4.76 COP	128.02 kW 5.04 COP	143.21 kW 5.61 COP
50 °C	97.36 kW 3.45 COP	103.49 kW 3.66 COP	109.94 kW 3.89 COP	116.91 kW 4.13 COP	124.08 kW 4.38 COP	138.56 kW 4.88 COP
55 °C	95.18 kW 3.08 COP	101.06 kW 3.26 COP	107.30 kW 3.46 COP	114.00 kW 3.68 COP	120.80 kW 3.90 COP	134.80 kW 4.35 COP
60 °C	92.70 kW 2.80 COP	98.91 kW 2.98 COP	105.20 kW 3.17 COP	111.72 kW 3.36 COP	118.40 kW 3.56 COP	132.01 kW 3.96 COP

RTWW128

Water-to-Water Heat Pumps Dimensions



Direction	Description	Minimum Clearance Required (mm)							
		RTWW023	RTWW027	RTWW037	RTWW049	RTWW064	RTWW085	RTWW098	RTWW128
1	Plain Back	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2	Side Access	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
3	Compressor Access / Water	850	850	850	850	850	850	850	850
4	Side Access	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
5	Top – Height Clearance	500	500	500	500	500	500	500	500