

Modular Multi Source Heat Pump with alternative refrigerant



PRIME NR v2.1

Range of application :

- ▶ ERS-ground-storage, deep borehole and air cooler
- ▶ different sources: air, ERS, ground, water
- ▶ performance from 65kW to 390kW (85kW to 510kW)
- ▶ for heating and cooling
- ▶ new construction and refurbishment

- ▶ Combination of ERS-technology with solar loading, therefore high use of regenerative energy
- ▶ Application range ground in heating from -5 °C to 15 °C (water from 5 °C to 15 °C)
- ▶ With external air modul the PRIME can be used as air water heat pump
- ▶ Modular expandable, with cascading further performance rise possible
- ▶ High performance though inovative heating and cooling technology
- ▶ Can be used individually for different sources
- ▶ Long life expectancy though soft starting
- ▶ Phase sequencer monitoring integrated
- ▶ Fully hermetic compressor heat pump
- ▶ With alternative refrigerant R454B
- ▶ Standard gas monitoring system
- ▶ Standard with two gas sensors
- ▶ Remote monitoring via internet
- ▶ Maintenance-friendly housing
- ▶ Standard motor protection
- ▶ Low GWP value of 466
- ▶ Few space required

Seasonal energy efficiency
in heating

**189 %
(260%)**

Efficiency class

A+++

		25 kW without cooling*** (30 kW)					25 kW active cooling*** (30 kW)					
Operating point	Heating capacity*	Power consumption (kW)	Current consumption in A	Coefficient of performance (COP/EER)	Refrigeration capacity (kW)	Heating capacity*	Power consumption (kW)	Current in A	Coefficient of performance	Refrigeration capacity (kW)	Cooling capacity (kW)	
	B0 / W35	22,7	4,9	10,1	4,6	17,8	21,6	4,9	10,2	4,4	16,7	-
B0 / W55	21,6	7,3	12,8	3,0	14,3	20,7	7,2	13,0	2,9	13,5	-	
B10 / W35	29,4	4,8	10,0	6,1	24,6	28,3	4,9	10,1	5,8	23,6	-	
B10 / W55	25,9	7,4	12,9	3,5	18,4	25,1	7,4	13,2	3,4	17,7	-	
B30 / W10						-	4,3	10,3	5,0	-	26,6	
B30 / W12						-	4,2	10,1	6,9	-	28,5	
B30 / W15						-	4,0	10,0	7,6	-	30,6	
Efficiency**	Clime	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	
	average	189% (254%)	144% (174%)	A+++	A++ (A+++)	56,8 dB/A	188% (253%)	142% (173%)	A+++	A++ (A+++)	56,8 dB/A	
		45 kW without cooling*** (55 kW)					45 kW active cooling*** (55 kW)					
Operating point	Heating capacity*	Power consumption (kW)	Current consumption in A	Coefficient of performance (COP/EER)	Refrigeration capacity (kW)	Heating capacity*	Power consumption (kW)	Current in A	Coefficient of performance (COP/EER)	Refrigeration capacity (kW)	Cooling capacity (kW)	
	B0 / W35	36,8	8,1	16,1	4,5	28,7	34,6	7,7	15,3	4,5	26,9	-
B0 / W55	35,2	12,0	21,0	2,9	23,2	33,0	11,2	19,9	2,9	21,8	-	
B10 / W35	54,0	7,9	16,5	6,8	46,1	50,0	8,0	15,3	6,2	42,0	-	
B10 / W55	47,4	12,8	23,0	3,7	34,6	42,6	11,9	20,6	3,6	30,7	-	
B30 / W10						-	7,3	15,8	5,2	-	46,8	
B30 / W12						-	7,2	15,7	7,0	-	50,0	
B30 / W15						-	7,0	15,5	7,7	-	53,5	
Efficiency**	Clime	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	
	average	189% (260%)	144% (182%)	A+++	A++ (A+++)	55,6 dB/A	188% (259%)	143% (181%)	A+++	A++ (A+++)	55,6 dB/A	
		65 kW without cooling**** (85kW)***					65 kW active cooling*** (85kW)***					
Operating point	Heating capacity*	Power consumption (kW)	Current consumption in A	Coefficient of performance (COP/EER)	Refrigeration capacity (kW)	Heating capacity*	Power consumption (kW)	Current in A	Coefficient of performance (COP/EER)	Refrigeration capacity (kW)	Cooling capacity (kW)	
	B0 / W35	57,1	12,6	26,0	4,5	44,5	56,3	12,1	23,3	4,6	44,2	-
B0 / W55	52,0	17,5	31,7	3,0	34,5	51,4	17,3	32,1	3,0	34,1	-	
B10 / W35	76,2	14,1	25,0	5,4	62,2	74,8	14,4	25,5	5,2	60,4	-	
B10 / W55	70,8	20,7	34,0	3,4	50,1	69,5	21,2	34,7	3,3	48,3	-	
B30 / W10						-	11,5	23,2	4,9	-	69,7	
B30 / W12						-	11,3	23,0	6,6	-	74,5	
B30 / W15						-	11,1	22,7	7,2	-	79,5	
Efficiency**	Clime	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	η_s (%)** 35 °C	η_s (%)** 55 °C	Efficiency class 35	Efficiency class 55	Sound power in dB/(A) (interior)	
	average	185% (219%)	149% (174%)	A+++	A++ (A+++)	52,2 dB/A	186% (218%)	150% (173%)	A+++	A++ (A+++)	52,2 dB/A	

* test in accordance with EN 14511-1 to 4 and EN 12102
 ** seasonal energy efficiency in heating with ground/water

*** with water/water heat pump apply the data in parentheses
 **** Low-temperature heat pumps according to (EU) No. 813/2013

	25 kW w/o C. (30 kW w/o C)	25 kW a.C. (30 kW a.C)	45 kW w/o C. (55 kW w/o C)	45 kW a.C. (55 kW a.C)	65 kW w/o C. (85 kW w/o C)	65 kW a.C. (85 kW a.C)
Condenser (heating secondary)						
Type	plate heat exchanger AISI 316					
Recommended flow rate**	3,9 m ³ /h (5,1 m ³ /h)		7,0 m ³ /h (9,3 m ³ /h)		9,7 m ³ /h (12,9 m ³ /h)	
Pressure loss at nominal volume**	32 mbar (56 mbar)		48 mbar (59 mbar)		90 mbar (110 mbar)	
Max. operating pressure	45 bar					
Max. temperature	150 °C					
Connections heating	2 x 2" flat sealing					
Max. / min. supply line temperature heating**	60°C/5°C (60°C/10°C)					
Max. / min. supply line temperature cooling**	40°C/5°C (40°C/10°C)					

Evaporator (source primary)						
Type	plate heat exchanger AISI 316					
Insulation	PVC- and CFC-free					
Recommended flow rate**	5,7 m ³ /h (6,8 m ³ /h)		10,0 m ³ /h (14,6 m ³ /h)		14,3m ³ /h (17,4 m ³ /h)	
Pressure loss at nominal volume**	82 mbar (110 mbar)		125 mbar (153 mbar)		210 mbar (262 mbar)	
Max. operating pressure	45 bar					
Max. temperature	150 °C					
Connections source	2 x 2" flat sealing					
Max. / min. source inlet temperature heating**	15°C/-5°C (15°C/5°C)					
Max. / min. source inlet temperature cooling**	40°C/-5°C (40°C/5°C)					
Expansion valve	electronical					

Cooling cycle						
Insulation cooling cycle	PVC- and CFC-free					
Compressor	Scroll					
Refrigerant	R 454B					
Filling capacity	5,5 kg	5,7 kg	8,0 kg	8,5 kg	12,0 kg	14,0 kg
Ester oil content (liter)	1,77 l		3,38 l		4,7 l	

Housing/Modulbox						
Dimensions (WxDxH)	690 mm x 760 mm x 790 mm					
Colour	RAL 7016					
Weight	190 kg		260 kg		300 kg	
Material / sound insulation	Arma Sound RD 240					

Electrical data						
Nominal voltage (heat pump)	3 Ph/50 Hz/ 400V					
Compressor startup current (with soft-start)	18 A		40 A		45 A	
Compressor startup current (w/o soft-start)	101 A		174 A		225 A	
Max. compressor operating current / Motor overload protection	15 A		34 A		40 A	
Fuse protection (compressor)	D 25 A 4-pol.		D 40 A 4-pol.		D 50 A 4-pol.	
Fuse protection (controller)	B 16 A - 2-pol.					
Fuse protection (circulation pump, valves)	C 20 A - 4-pol.					
Type of protection	IP 24					
Supply compressor	5 x 6 mm ² flexible		5 x 10 mm ² flexible		5 x 10 mm ² flexible	
Supply controller	3 x 2,5 mm ² flexible					
Supply circulation pump, valves	5 x 4 mm ² flexible					

Product-No. ground/water heat pump	1420 0024	1421 0024	1420 0045	1421 0045	1420 0065	1421 0065
Product-No. water/water heat pump	1460 0024	1461 0024	1460 0045	1461 0045	1460 0065	1461 0065

* test in accordance with EN 14511-1 to 4 and EN 12102

** with water/water heat pump apply the data in parentheses

PRIME NR v2.1

	Basic housing	Extension housing	Electrical cabinet housing v1.8
Dimensions (WxHxD)	800 mm x 2000 mm x 800 mm		800 mm x 2000 mm x 400 mm
Number of doors	1		
Weight*	137 kg	132 kg	124 kg
Material	steel sheet		
Surface	exterior powder coated, structured coating		
Colour	RAL 7016S		
Type of protection	IP 55		
Included	1x side panel 2000 x 800 mm	--	2x side panels 2000 x 400 mm
Capacity	2 Moduls per housing		max. 8 Moduls in selectable form

Product No.	1400 0328	1400 0329	1400 0350
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* w/o heat pump modul, w/o electrical components

Electrical cabinet accessories v2.1	Product No.
E-Modul, NR 2 x 25kW	1400 0390
E-Modul, NR 1 x 45kW or 1 x 65kW + 1 x 25kW	1400 0391
E-Modul, NR 2 x 45kW or 2 x 65kW	1400 0392

Accessories for heating and cooling circuits v2.1	Product No.
Up to 3 heating and cooling circuits	1400 0351
From 4 to 6 heating and cooling circuits	1400 0352



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