

# Thermia Atria Optimum Atria Duo Optimum



Atria Optimum



## The silent heat pump that can also handle tougher conditions.

**Thermia Atria Optimum** is an air source heat pump with variable speed controlled circulation pumps. This means the heat pump always works under ideal conditions, which reduces the overall energy consumption.

The heat pump consists of two units – one indoor part and one outdoor part. As all of the Atria Optimum's essential parts (such as the compressor and electronic controls) are located indoors, the heat pump is particularly well suited to locations with harsh weather conditions and a cold climate.

Atria Optimum has been developed to be extremely quiet. The low noise level is mainly due to the outdoor unit's unique acoustic design.

The high annual efficiency\* allows you to reduce your energy consumption by up to 80%. What's more, the built-in TWS technology\*\* means that the hot water is produced faster and at higher temperatures than with traditional technique.

With the optional accessory Thermia Online you have the ability to remotely control and monitor your heat pump via a computer, tablet and smartphone.

The **Thermia Atria Duo Optimum** is a good choice if you have a low ceiling height or require very large amounts of hot water.

Atria Duo Optimum



\* Annual efficiency is a measure that describes how efficiently your heat pump works over a whole year, including both warm and cold periods as well as hot water production.  
\*\* TWS = Patented heating technology for hot water production, developed by Thermia.

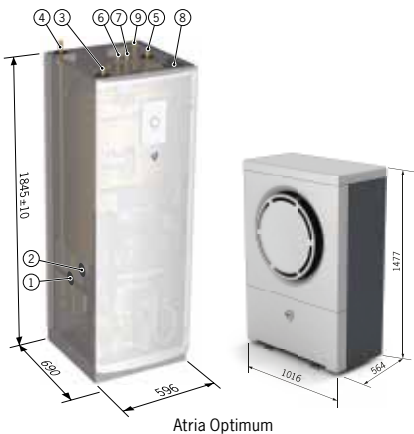
# Technical data Atria Optimum

## Atria Duo Optimum

### Connection Atria Optimum

The brine lines can be connected on either the left or right-hand sides of the heat pump.

- 1 Brine return line (Brine in), 28 Cu
- 2 Brine supply line (Brine out), 28 Cu
- 3 Heating system supply line, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 4 Heating system return line, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 5 Connection for bleed valve, 22 Cu
- 6 Hot water pipe, 22 mm
- 7 Cold water pipe, 22 mm
- 8 Lead-in for incoming power supply, sensors and communication cable
- 9 Expansion outlet brine circuit, DN25 int.



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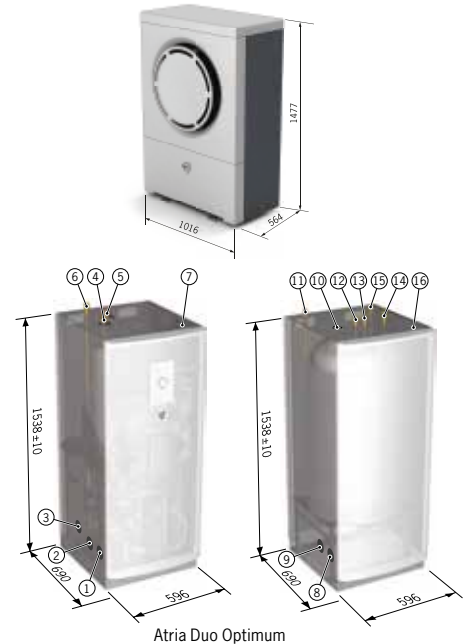
The brine lines can be connected on either the left or right-hand sides of the heat pump.

#### Heat pump:

- 1 Brine out, during defrosting, 28 Cu
- 2 Return pipe water heater, 28 Cu
- 3 Brine in
- 4 Heating system supply pipe, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 5 Heating system return pipe, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 6 Brine out, normal operation
- 7 Lead-in power and sensor lead

#### Water heater:

- 8 Brine in, during defrosting
- 9 Water heater, return pipe
- 10 Bleed valve, at stainless steel water heater
- 11 Brine out, during defrosting
- 12 Hot water pipe, 22 mm
- 13 Cold water pipe, 22 mm
- 14 Water heater supply pipe to TWS coil
- 15 Brine, expansion line when outdoor unit is positioned at high level
- 16 Lead-in sensor lead



Atria Duo Optimum

Atria Optimum/Atria Duo Optimum			6	8	10	12
<b>Refrigerant</b>	Type		R404A	R404A	R404A	R404A
	Amount	kg	0.95	1.45	1.50	1.60
<b>Compressor</b>	Type		Scroll	Scroll	Scroll	Scroll
<b>Electrical data 3-N, -50Hz</b>	Main supply	Volt	400	400	400	400
	Rated power compressor	kW	3.0	3.2	4.2	5.0
	Rated power circulation pumps/fan	kW	0.3	0.3	0.4	0.6
	Auxiliary heater, 5 steps	kW	3/6/9/12/15	3/6/9/12/15	3/6/9/12/15	3/6/9/12/15
	Start current <sup>13</sup>	A	9	10	12	14
	Fuse	A	10 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup> /20 <sup>6</sup> / 25 <sup>7</sup> /25 <sup>8</sup> /30 <sup>9</sup>	16 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup> /20 <sup>6</sup> / 25 <sup>7</sup> /25 <sup>8</sup> /30 <sup>9</sup>	16 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup> /20 <sup>6</sup> / 25 <sup>7</sup> /30 <sup>8</sup> /35 <sup>9</sup>	16 <sup>3</sup> /20 <sup>4</sup> /25 <sup>5</sup> /25 <sup>6</sup> / 25 <sup>7</sup> /30 <sup>8</sup> /35 <sup>9</sup>
<b>Electrical data 1-N, -50Hz</b>	Main supply	Volt	230	230	230	230
	Rated power compressor	kW	3.2	3.6	4.5	5.5
	Rated power circulation pumps/fan	kW	0.3	0.3	0.4	0.6
	Auxiliary heater, 3 steps	kW	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5
	Start current <sup>13</sup>	A	22	24	26	28
	Fuse	A	25 <sup>3</sup> /32 <sup>4</sup> /40 <sup>5</sup>	25 <sup>3</sup> /32 <sup>4</sup> /40 <sup>5</sup>	32 <sup>3</sup> /40 <sup>4</sup> /50 <sup>5</sup>	32 <sup>3</sup> /40 <sup>4</sup> /50 <sup>5</sup>
<b>Performance</b>	COP <sup>1</sup>		3.94	4.01	3.82	3.80
	COP <sup>2</sup>		3.61	3.72	3.59	3.48
	Heating capacity <sup>2</sup>	kW	6.18	7.81	9.39	10.97
	Electrical power <sup>2</sup>	kW	1.71	2.10	2.62	3.15
<b>Lowest outdoor temperature allowed for compressor start</b>		°C	-20	-20	-20	-20
<b>Max/min temperature</b>	Cooling circuit	°C	20/-25	20/-25	20/-25	20/-25
	Heating circuit	°C	55/20	55/20	55/20	55/20
<b>Anti freeze media<sup>10</sup></b>			Ethylene glycol + Water solution with a freezing point below -32 ± 1°C			
<b>Sound power level high/low</b>	Indoor unit <sup>11</sup>	dB(A)	43	48	46	48
	Outdoor unit <sup>12</sup>	dB(A)	55/54	55/54	57/54	60/54
<b>Max. pipe length</b> (Cu pipe Ø 28 mm between heat pump and outdoor unit)		m	30 (15+15)	30 (15+15)	30 (15+15)	30 (15+15)
<b>Water volume</b>	Atria Optimum	l	180	180	180	180
	Water heater unit	l	180	180	180	180
<b>Weight</b>	Outdoor unit, empty	kg	99,4	99,4	99,4	99,4
	Indoor unit Atria Optimum, empty	kg	260	260	260	268
	Indoor unit Atria Optimum, filled	kg	440	440	440	448
	Indoor unit Atria Duo Optimum	kg	154	154	154	162
	Water heater unit, filled	kg	352	352	352	360

The measurements are performed on a limited number of heat pumps which can cause variations in the results. Tolerances in the measuring methods can also cause variations.

- 1) At A7W35 Δ10 warm side (excluding circulation pumps and outdoor unit).
- 2) At A7W35 according to EN 14511 (including circulation pumps and outdoor unit).
- 3) Heat pump with 3 kW auxiliary heater (1-N 1.5 kW).

- 4) Heat pump with 6 kW auxiliary heater (1-N 3 kW).
- 5) Heat pump with 9 kW auxiliary heater (1-N 4.5 kW).
- 6) 12 kW auxiliary heater (compressor off).
- 7) 15 kW auxiliary heater (compressor off).
- 8) Heat pump with 12 kW auxiliary heater.
- 9) Heat pump with 15 kW auxiliary heater.

- 10) Propylene glycol or ethanol may not be used.
- 11) Sound power level measured according to EN ISO 3741 at A7W45 (EN 12102).
- 12) Sound power level measured according to EN ISO 3741.
- 13) According to IEC61000.