

COMPACT P AIR 9

Product description

Compact P AIR 9 has the same benefits and functions as Compact P, but also has an integrated air/water heat pump, with connection to waterborne underfloor heating or low-temperature radiators for central heating.

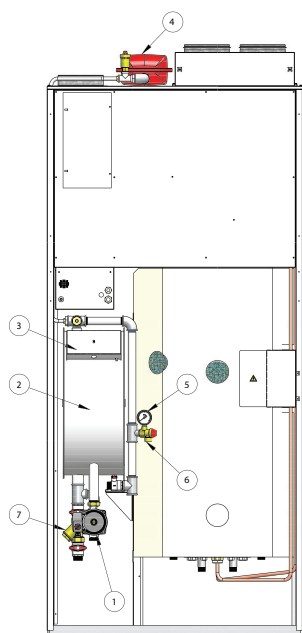
The solution consists of an integrated interior section in Compact P, as well as an exterior section that is easy to connect.

AIR 9 is delivered with a reversible heat pump, which also makes the unit capable of cooling.

AIR 9 is very silent and can be placed without disturbing its surroundings. During summer, when only hot sanitary water is needed, the fan is limited, reducing the noise level. This limit occurs when the outdoor temperature exceeds 15 °C and limiting the compressors output to a maximum of 60 %. These criteria can be set individually.

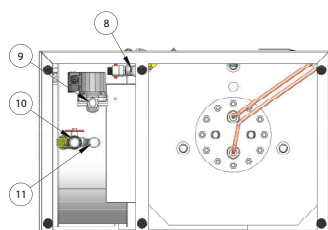
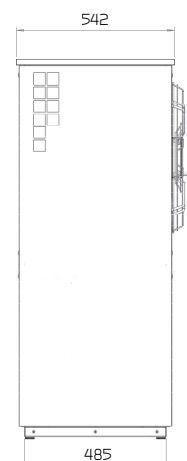
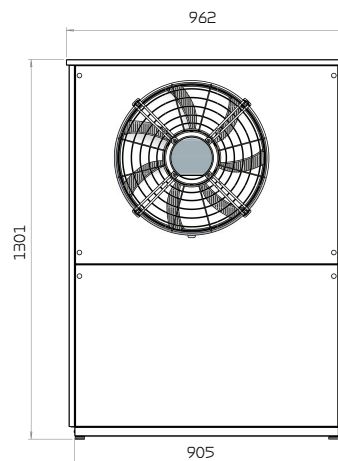


Inside unit for Compact P AIR 9



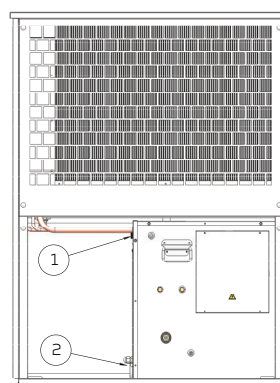
Front

1. Integrated circulation pump interior/ exterior sections 1"
2. 50-litre buffer tank
3. 2x3 kW supplementary electrical heating
4. Pressure expansion vessel (central heating circuit)
5. Manometer (central heating circuit)
6. Safety valve, 2.5 bar (central heating circuit)
7. Particle filter



Base

8. Flow, central heating 3/4"
9. Flow to exterior section 1"
10. Return flow from exterior 1"
11. Return flow from exterior 3/4"



1. Flow 1"
2. Return flow 1"



Effective and quiet ventilator with "owl wings".

Summer/winter setting ensures an extra low sound level in the summer.

Low-energy EC-motor.

AIR 9 exterior unit is made from white powder-coated aluzinc steel plate (RAL 9016).

Powder-coated condensation tray prevents "acid water" and leads off the condensation.

A heating cable for frost protection of the condensation drain is included.

Adjustment screws for levelling

AIR 9 is controlled via the same CTS 700 operating panel as is used for Compact P.



A large, well-dimensioned evaporator ensures a good output.

AIR 9 is reliable right down to -22°C

An inverter-controlled DC compressor ensures a variable output and low energy consumption.

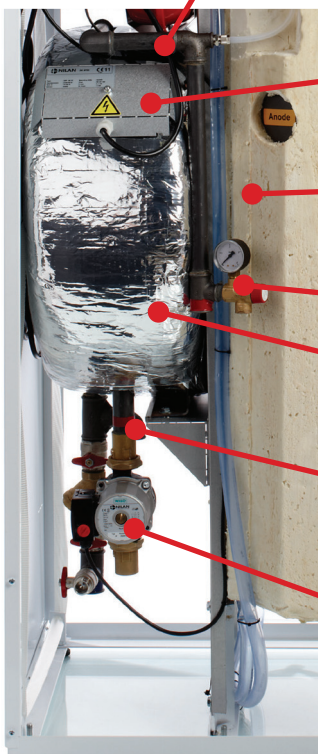
Hermetically-sealed cooling circuit.

The aggregate can therefore be installed without requiring a cooling technician.



AIR 9 interior unit is integrated in Compact P.

This saves space and ensures a neat and tidy installation.



Supplementary electrical heating of 2 x 3 kW
Ensures indoor heating during periods of severe frost.

8-litre expansion tank for central heating.
Placed on top of the system.

Safety valve to the central heating system.

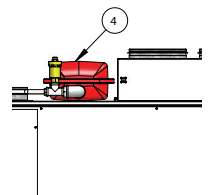
Manometer showing the current pressure in the central heating system.

50-litre buffer/charge circuit.
The central heating can thus be activated as required.

Filling tank for central heating.

Soil filter.

Integrated circulation pump to AIR 9 (exterior unit).



TECHNICAL DATA

Technical specifications

Dimensions (inside part) (W x D x H) - Integrated in Compact P	550 x 300 x 1100 mm
Weight (inside part)	55 kg
Control	CTS 700
Dimensions (outside part) (W x D x H)	962 x 542 x 1301 mm
Weight (outside part)	125 kg
Supply voltage (inside part)	400/230V 2L+ N+PE, 50Hz
P _{MAX} (inside part)	6.1 kW
Fuse size (inside part)	16 A
Standby electricity consumption	2.5 W
Supplementary electrical heating	2 x 3 kW
Buffer tank (integrated)	50 L
Design pressure (central heating)	4 bar
Opening pressure safety valve (central heating)	2.5 bar
Expansion vessel (central heating)	8 Litre
Booster expansion vessels	0.5 bar G
Max. air volume	3400 m³/h
Variable compressor	30 - 100 %
Tightness class fan	IP54
Supply voltage (outside part)	230V 1 N+PE, 50Hz
P _{MAX} (outside part)	3.3 kW
Fuse size (outside part)	16 A
Rated output, (max/min) A-Pump	31/99 W
Rated output, (max/min) A-Pump	0.2/0.63 A
Condenser pressure loss (central heating)	15 kPa/0.42 l/s
Central heating connection	3/4"
Refrigerant	R410A
Refrigerant filling	3,4 kg
Pressostat low pressure (on/off)	2.2/3.4 bar G
Pressostat high pressure (on/off)	42/33 bar G
Operating temperatures	-22 °C → 50 °C
Central heating, flow temperature	25°C → 45°C
Connection dimension	1"
Heat output P _H with variable compressor at 7°C/35°C, according to EN 14511:2012 (max. 5400 RPM)	8,4 kW
Heat output P _H with variable compressor at 2°C/35°C, according to EN 14511:2012 (max. 5400 RPM)	6,7 kW
Heat output P _H with variable compressor at -7°C/35°C, according to EN 14511:2012 (max. 5400 RPM)	5,7 kW
Heat output P _H with variable compressor at -15°C/35°C, according to EN 14511:2012 (max. 5400 RPM)	4,5 kW
Heat output P _H with variable compressor at 7°C/45°C, according to EN 14511:2012 (max. 5400 RPM)	7,8 kW
Heat output P _H with variable compressor at -7°C/45°C, according to EN 14511:2012 (max. 5400 RPM)	5,4 kW
SCOP testet according to EN 14825:2012*	5,11
P _{design} (t _{out} -10°C)	5,21 kW

*SCOP (Seasonal COP) is for "low temperature use, average climate, defined flow, reversible"

Sound

At 50% capacity at testpoint 7/6 and 30/35 °C according to EN 12102

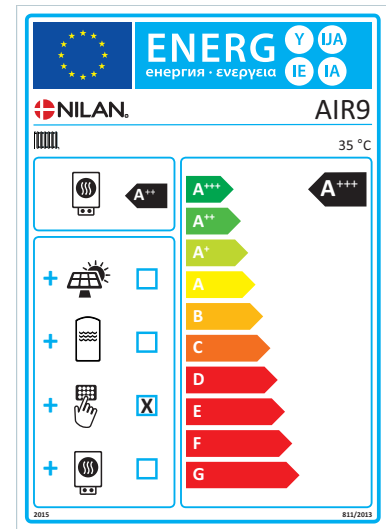
Distance to Outside unit (Meters)	1	3	5	10
LpA dB(A)	38	28	24	18

At 100% capacity at testpoint 7/6 and 30/35 °C according to EN 12102

Distance to Outside unit (Meters)	1	3	5	10
LpA dB(A)	55	45	41	35

Heat pump for space heating

Model	AIR 9
Air-to-water heat pump	Yes
Water-to-water heat pump	No
Brine-to-water heat pump	No
Low-temperature heat pump	Yes
Equipped with a supplementary heater	Yes
Heat pump combination heater	No
Temperature control:	
Modell	CTS700
Class	2
Contribution to seasonal space heating energy efficiency	2%



Item	Symbol	Value	Unit
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Rated heat output	P_{rated}	5,21	kW
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Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature of T_j

$T_j = -7\text{ °C}$	P_{dh}	4,79	kW
$T_j = +2\text{ °C}$	P_{dh}	2,88	kW
$T_j = +7\text{ °C}$	P_{dh}	1,90	kW
$T_j = +12\text{ °C}$	P_{dh}	2,12	kW
$T_j = \text{bivalent temperature}$	P_{dh}	5,21	kW

$T_j = \text{operation limit temperature}$	P_{dh}	0	kW
For air-water-heating pumps $T_j = -15\text{ °C}$ (if TOL < -20 °C)	P_{dh}		kW
Bivalent temperature	T_{biv}	-10	°C
Cycling interval capacity for heating	P_{cyc}		kW
Degradation co-efficient	C_{dh}	0,94-0,99	

Power consumption in modes other than active mode

Off mode	P_{OFF}	0,01	kW
Thermostat off-mode	P_{TO}	0,005	kW
Standby mode	P_{SB}	0,01	kW
Crankcase heater mode	P_{CK}	0	kW

Other items

Capacity control:	Variable compressor Variable indoor water flow		
	Variable indoor temperature adjustment		
Sound power level, outdoors	L_{WA}	46	dB
Emissions of nitrogen oxides	Q_{HE}	1464	kWh

Item	Symbol	Value	Unit
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Seasonal space heating energy efficiency	η_s	206	%
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Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j

$T_j = -7\text{ °C}$	COP_d	3,20	
$T_j = +2\text{ °C}$	COP_d	4,95	
$T_j = +7\text{ °C}$	COP_d	6,53	
$T_j = +12\text{ °C}$	COP_d	9,69	
$T_j = \text{bivalent temperature}$	COP_d	2,83	

$T_j = \text{operation limit temperature}$	COP_d	0	
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C)	COP_d		
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	COP_{cyc}		
Heating water operating limit temperature	WTOL	45	°C

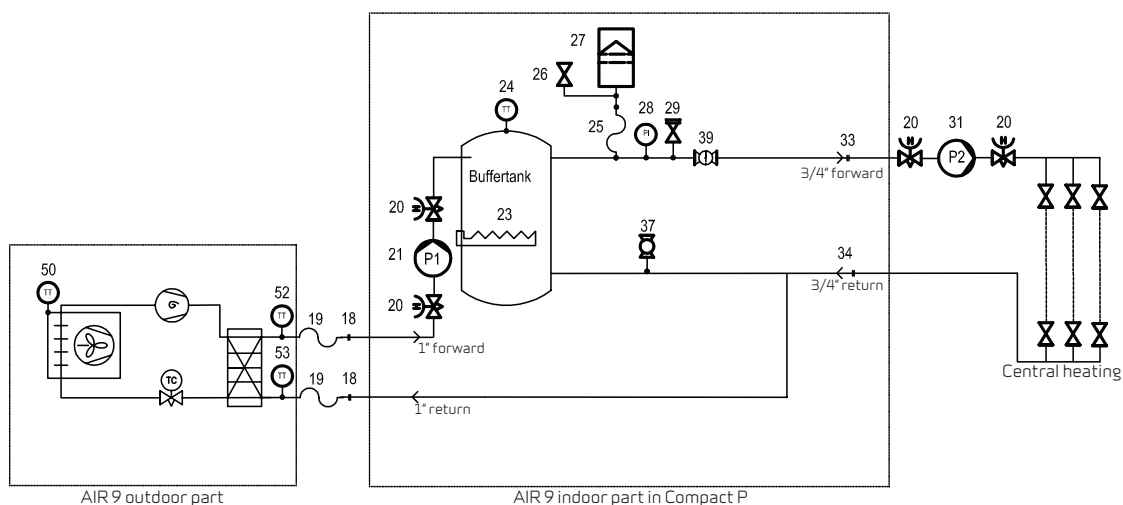
Supplementary heater

Rated heat output	P_{sup}	6	kW
Type of energy input	Electrical		

For air-to-water heat pumps: Rated air flow rate, outdoors		3000	m³/h
For water-/ brine-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			m³/h

INSTALLATION

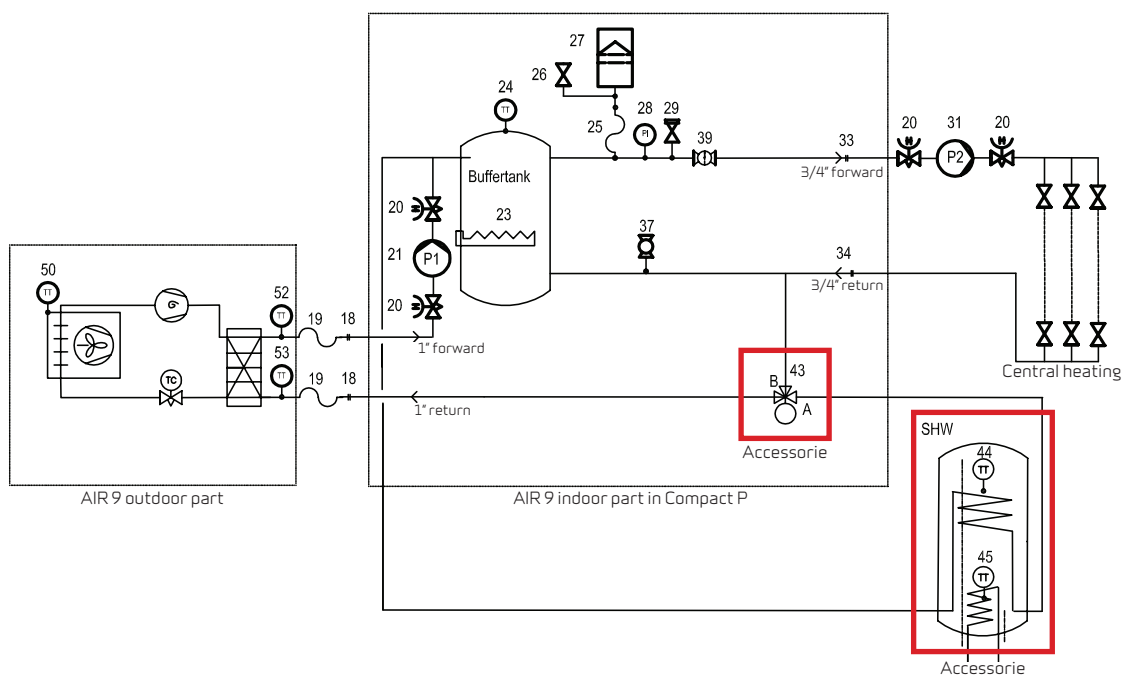
Compact P AIR 9

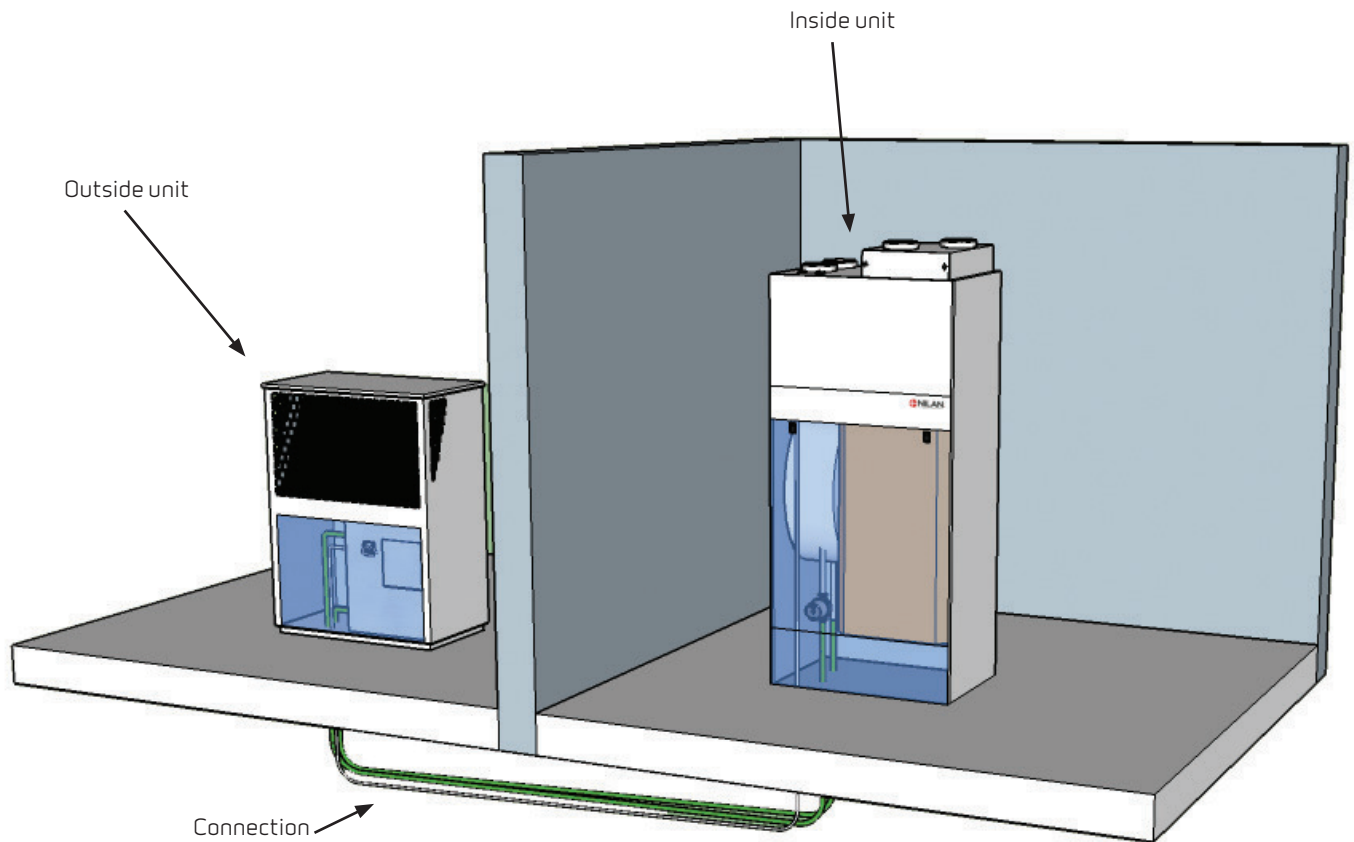


- 18 Connection 1"
- 19 Flexihose 1"
- 20 Shut-off valve
- 21 P1 circulation pump 130 mm
- 23 Supplementary electrical heating 2 x 3 kW
- 24 Temperature sensor T18 (centralvarme)
- 25 Flexihose 10 mm
- 26 Automatic control vent
- 27 Expansion tank 8 litre
- 28 Manometer
- 29 Safety valve 2,5 bar

- 31 P2 circulation pump
- 33 Connection 3/4"
- 34 Connection 3/4"
- 37 Feed cock
- 39 Shut-off valve
- 43 3-way valve
- 44 Temperature sensor T21
- 45 Temperature sensor T22
- 50 Temperature sensor evaporator
- 52 Temperature sensor T16
- 53 Temperature sensor T17

SHW warmwater-tank connected to Compact P AIR 9





Simple installation

AIR 9 is an outdoor air heat pump that is connected to the Compact P interior section via hydraulic tubes and a communication line.

The hermetically sealed heat pump is installed in the outside part, with reliable operation right down to -22°C .

A circulation pump is mounted on the inside part, to pump the boiler water between the outside and inside sections. The circulation pump is a low-energy pump.

There is an integrated frost protection cable to ensure that the condensation drain does not freeze.

The outside part is run by CTS700 automatic controls via the control panel used for the Compact P.

AIR 9 is placed on a stable base, e.g. a cast foundation, and towards the prevailing wind direction.

