RESIDENTIAL SOLUTIONS WITH AIR TO WATER HEAT PUMPS

R 410 A

R 407 C

APPLICATIONS

RESIDENTIAL

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

SOLUTIONS

AIR TO WATER HEAT PUMPS

Technibel Heat Pumps and Systems: The excellence in heating and air conditioning

- Since 2005, TECHNIBEL has been recognized by the profession as one of the French leaders in Air to Water heat pumps for residential use.

It is justified by:

- the performances of our heat pumps
- the quality of our heat pumps
- our mastery of the technology implemented
- a range of systems which are perfectly adapted to the needs of home-owners, and to both existing and new installations
- customer support in term of tools and services.

Technibel Climatisation
UNE AVANCE DANS L'AIR DU TEMPS

Water range

Systems with Air to Water heat pumps

Monoblock Air/Water heat pumps

For 50 years, TECHNIBEL has designed, produced and marketed heat pumps, while constantly searching to improve their performances and quality.

PSE, PERCHE (AEM), TECTURBO, CASCADE, PMER have been replaced by 3 sets of monoblock Air/Water heat pumps with integrated hydraulic equipment.

Each set offers features that are suitable for one or several uses in the residential or small office sector.

High temperature

4 models from 13 to 20 kW : PHTJ and PHT

Capable of heating water to **65°C** (PHTJ 14 and 19) or **60°C** (PHT 13 and 16) and of operating when the outdoor temperature falls as low as -16°C, they operate in **HEATING** mode only.

They can also be used to produce domestic hot water (Technibel offers a DHW kit with a 300-litre or 500-litre tank) - 1 radiators zone solution.

Medium temperature

PHRT 7/9/12/16, from 7 to 15 kW

These heat pumps produce water at a maximum temperature of **55°C** in **HEATING** mode. They also operate down to an outdoor temperature of –16°C.

In their reversible version, they can be used to **COOL** dwellings (or other premises) during hot weather. The government's sustainable development recommendations should be applied.

In COOLING mode, the max/min temperature of the water produced is +20°C/+5°C.

Operation from -16°C in Heating mode to +43°C in Cooling mode (outdoor temperature).

Low temperature

PHR 6/8/11/15/17 from 6 to 17 kW

For this third range, the maximum temperature of the water produced is: **+40°C** in Heating mode.
These heat pumps are especially suited to **UNDERFLOOR HEATING/COOLING** applications.
Operation from -16°C in Heating mode to +43°C in Cooling mode (outdoor temperature).

SYSTEM WITH HEAT PUMP CHOICES

	Total HEATING	Total HEATING+DHW	Existing boiler and retained with or without DHW	Partial HEATING	Total HEATING and COOLING	Maximum T° of water outlet	SOLUTION	Heat pump	Electric heating module	BI-PAC	Electric heating module BI-PAC
EXISTING			●	●		65°C	Boiler back-up	PHTJ	-	●	-
			●	●		60°C	Boiler back-up	PHT	-	●	-
			●	●	(1)	55°C	Boiler back-up	PHRT NF	-	●	-
	●	●				65°C	Boiler replacement	PHTJ	MCE 8/10/12	●	MCEDB 12
	●	●				60°C	Boiler replacement	PHT	MCE 8/10	●	MCEDB 12
NEW	●	●				65°C	Heating with 1 radiators zone	PHTJ	MCE 8/10/12	●	MCEDB 12
	●	●				60°C	Heating with 1 radiators zone	PHT	MCE 8/10	●	MCEDB 12
	●	●			(1)	55°C	Heating with 1 radiators zone	PHRT NF	MCE 8/10	●	MCEDB 12
	●				●	55°C	with terminal units	PHRT NF	MCE 8/10	-	-
	●				●	55°C	1 terminal units zone, 1 underfloor heating/cooling zone	PHRT NF	MCE 8/10	-	-
	●					55°C	1 low temperature radiators zone, 1 underfloor heating zone	PHRT NF	MCED 8/10	-	-
	●			●	●	40°C	1 underfloor heating-cooling zone	PHR NF	MCE 8/10/12	-	-
	●				●	40°C	2 underfloor heating-cooling zones	PHR NF	MCE 8/10/12	-	-

(1) COOLING, if suitable transmitters used

ADVANTAGES OF THE TECHNIBEL AIR TO WATER HEAT PUMP SOLUTIONS

- Quality and performances of the heat pumps
- Wide range of solutions
- Complete systems: intelligent control adapted to each case, accessories,...
- Startup included in the price of the appliances (France)
- User tools
- Contributes to the development of RENEWABLE ENERGIES
- Low CO_2 and greenhouse gas emissions (R407C and R410A cooling fluids)
- 2 ranges awarded NF label since 10 December, 2007 based on standard NF 414:
  - PHR 6 to 20 in the 30/35°C application
  - PHRT 7 to 16 in the 40/45°C and */55°C application

(see all the features on pages 34 and 36)

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

NF Pompe à chaleur

AFNOR CERTIFICATION :
NF 414

Certified characteristics:
- Heating capacity
- Coefficient of performance (COP)
- Declared sound power level

THREE RANGES OF HEAT PUMPS:
THE LEADER'S CHOICE

SAVINGS

The back-up heat pump meets our customers needs to reduce the heating costs of existing central heating installations using heating oil, propane or natural gas-fired boilers.

PHTJ, PHT and PHRT heat pumps have been specially designed to optimize the use of existing fossil fuel-fired installations. The heat pump is the priority operating system so long as its output remains optimal.

Below a given outdoor temperature, the existing boiler takes over the heating function, generally including domestic hot water production. This considerably reduces fossil-fuel consumption.

The advantages

- overall energy reduction (the heat pump recovers the calories available in the air and the system reduces the fossil fuel and electric power consumption)
- lower heating bills
- low greenhouse gas emissions (reduced CO_2 emissions and pollution by use of the cooling fluid R410A)

Examples of applications

Example A

Fuel or gas-fired boiler back-up heat pump-
zone 1 radiators

On/Off action on boiler and/or on valve
K 60 D 066 Z regulation controls:
- the heat pump
- the boiler
- the installation circulator

Example B

Fuel or gas-fired boiler back-up heat pump
zone 1 fuel oil or gas radiators or zone 1 floor heating-cooling

Proportional operation of mixing valve
K 60 D 067 Z regulation controls:
- the heat pump
- the proportional action valve controlling boiler
- the circulator

> Heat pump load-shedding possibility

> Electric convector heaters in the second zone possibility

> System available with 2 heat pumps in parallel

Example C1

Fuel or gas-fired boiler back-up heat pump
2 mixed zones (zone 1 floor heating-cooling and zone 2 radiators)

Proportional operation of floor outgoing valve and radiators outgoing feeder valve

Proportional operation of floor outgoing valve
K 60 D 068 Z regulation controls:
- the heat pump
- the boiler
- the proportional valve (not supplied) and circulator of each one of the 2 floor outgoing feeders (Underfloor and radiadors)
- Primary circuit circulator

Example C2

Fuel or gas-fired boiler back-up heat pump
2 floor heating-cooling zones

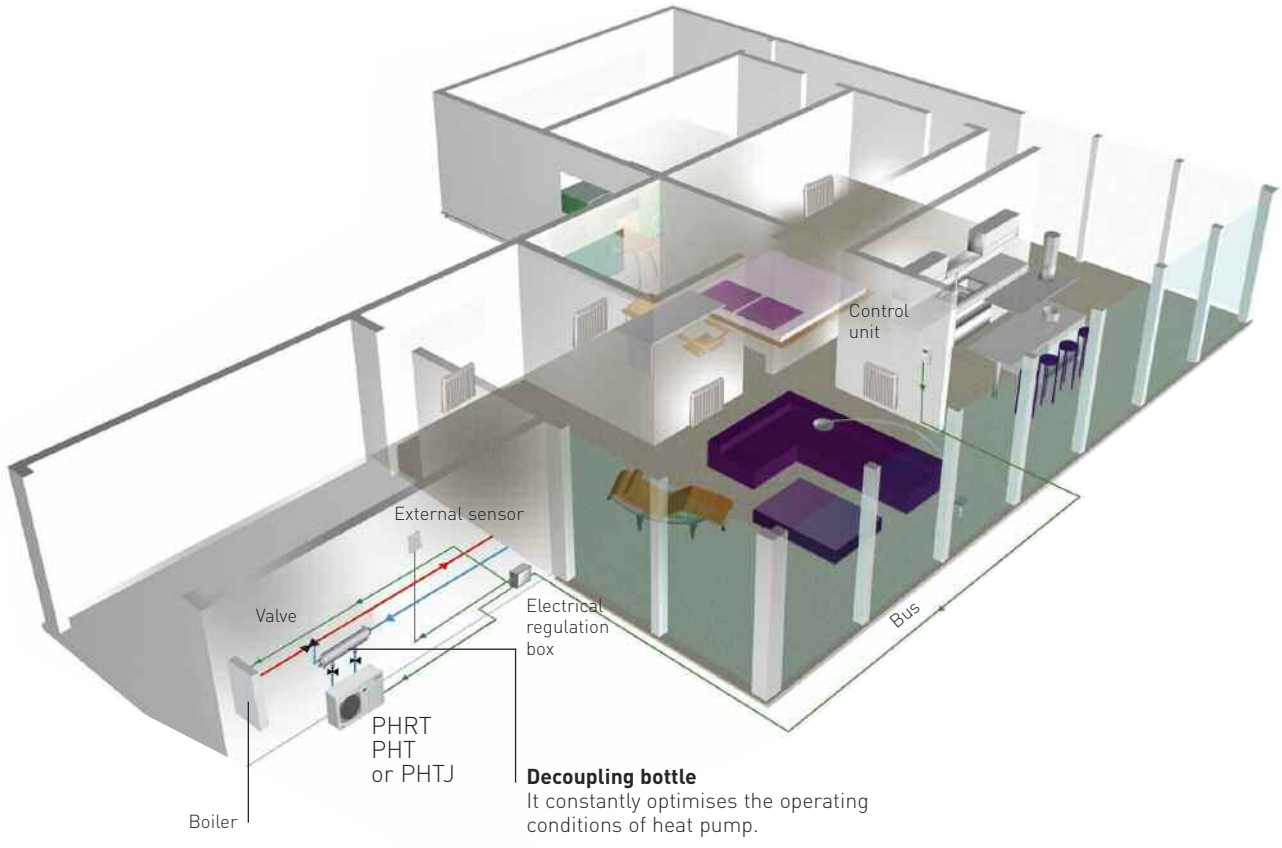
Proportional operation of floor outgoing valve
K 60 D 068 Z regulation controls:
- the heat pump
- the boiler
- the proportional valve (not supplied) and circulator on each of the 2 floor outgoing lines
- primary circuit circulator

Our solution

Control kits
K 60 D 066 Z - K 60 D 067 Z - K 60 D 068 Z

They include:

- 1 electrical regulation box to be placed inside the technical room
- Temperature sensors
- 1 control unit:
  This electronic control system is used to control the entire installation (signal to light the boiler, with priority given to the thermodynamic generator, ambient temperature control).
  Easy to use for selecting different operating modes - Stop/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option in 2 zones).



PHTJ / PHT / PHRT Heat pump
Complete hydraulic equipment

HEAT PUMP SOLUTION WITH 1 RADIATOR ZONE

SAVINGS

This solution is a radiator-based CENTRAL HEATING system, with the possibility of producing domestic hot water (DHW).

The air/water heat pump and the MCE heating module provides the full heating needs of a dwelling (or other premises).

Usual names:

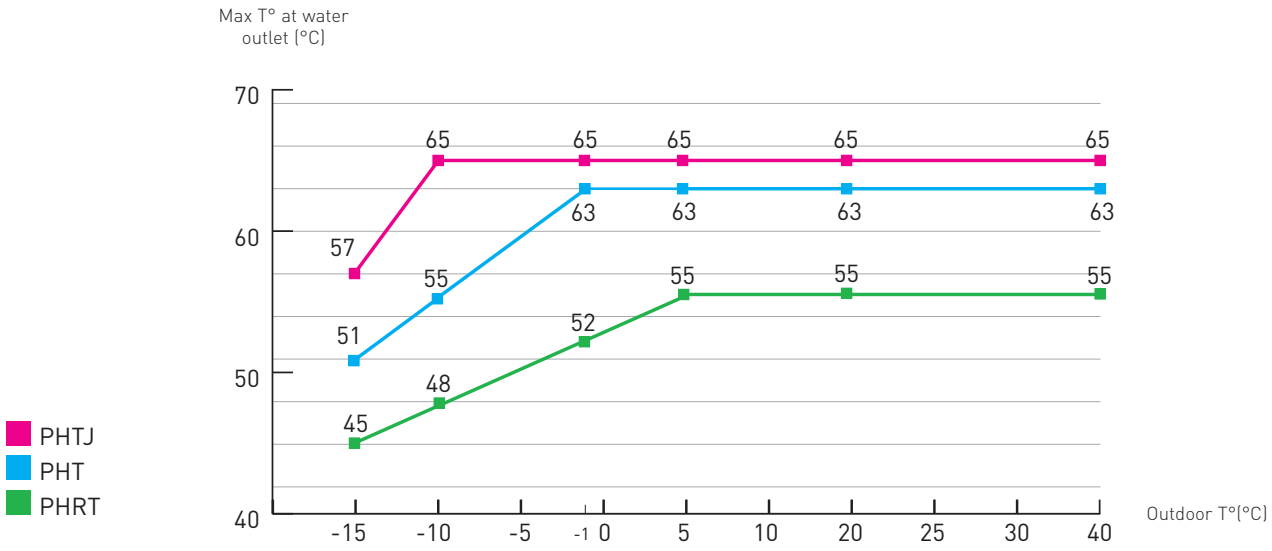
- "Boiler substitution" in NEW or EXISTING installations
- "Heating with 1 zone of radiators" in NEW installation

The advantages

- overall energy reduction (the heat pump recovers free calories from the the ambient air leading to less consumption of fossil fuel-fired energy and electricity)
- lower heating bills
- low greenhouse gas emissions (less CO_2 emissions and use of R410A or R407C reduced pollutant cooling agent)

Which TECHNIBEL heat pump?

This option is available for the ranges PHTJ, PHT and PHRT.
We recommand that the heat pump should be chosen based on the water temperature required for the basic outdoor temperature. Refer to the curves below:



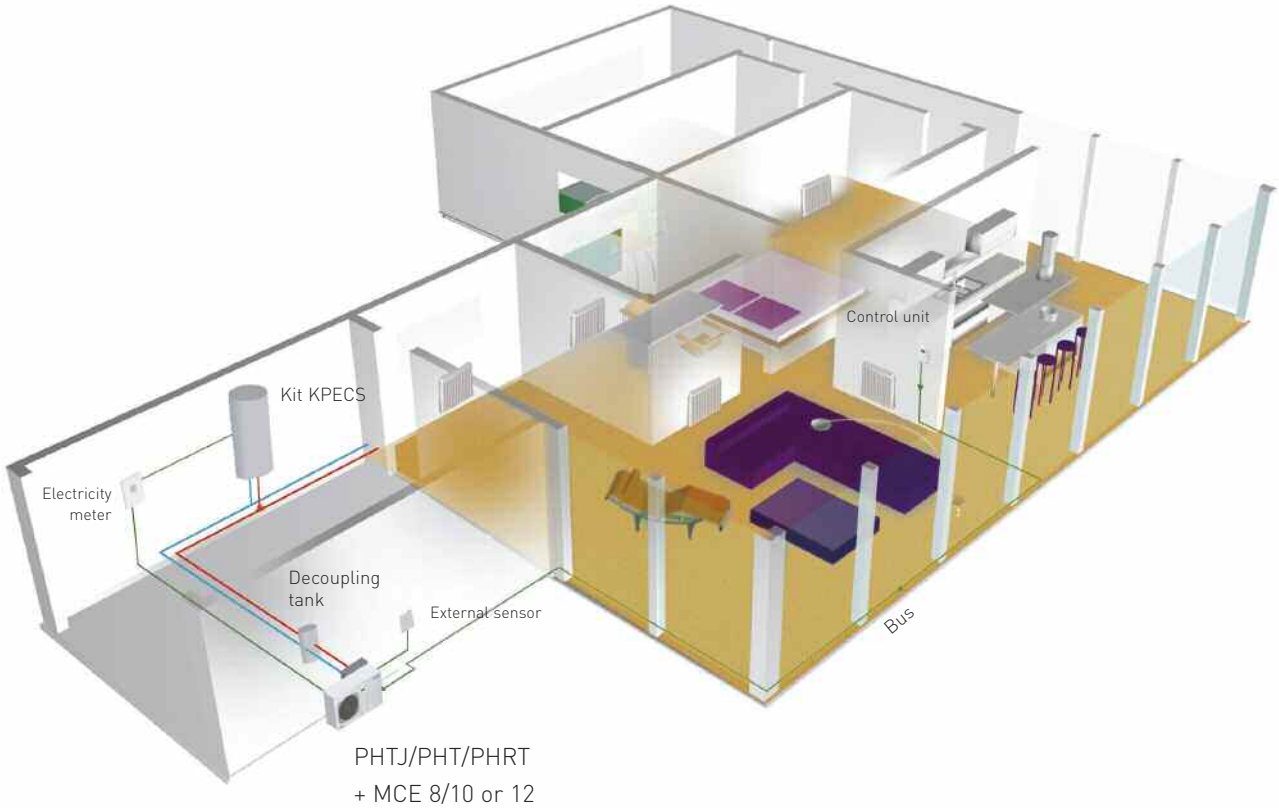
> Electric convector heaters in the second zone possibility

> System available with 2 heat pumps in parallel using the MCEDB 12 additional electric heater module

Our solution

PHTJ/PHT/PHRT heat pumps
The Heat pump is to be chosen to provide a required water temperature for a given outdoor temperature (see curve on previous page).

Radiators (not supplied by Technibel)



PHTJ/PHT/PHRT
+ MCE 8/10 or 12
or MCEDB

MCE / MCEDB 12 for Bi-PAC additional electric heater modules
They offer 2 power levels (with thermal protections); they are managed by the electronic control system with thermodynamic priority. Possibility of connecting a power cut-off signal.
When limited space is available, they can be installed directly on the back of the heat pump, except MCEDB 12 model, which has to be installed in the plant room.

Control unit (with MCE / MCEDB 12)
This electronic control system is used to control the entire installation.
Easy to use for selecting different operating modes - Stop/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option).
The housing incorporates an ambient air temperature sensor.

Also available
KPECS domestic hot water kit:
- 1 x 300 l or 500 l tank with supplementary 3 kW electric heating (in 230 Vac)
- 1 x 1" 3-way solenoid valve for tank feed (230 Vac On/Off)
- 1 x electric control

SOLUTION
WITH WATER TERMINAL UNITS

SAVINGS

True central heating which provides a feeling of well-being in the home, regardless of the season: heating during the winter and air conditioning during the summer.

> Savings
- Lower consumption of electrical energy, thanks to the high COP and high-efficiency control/management
- Optimised investment throughout the year, with just one system for heating as well as cooling

> Aesthetically pleasing units

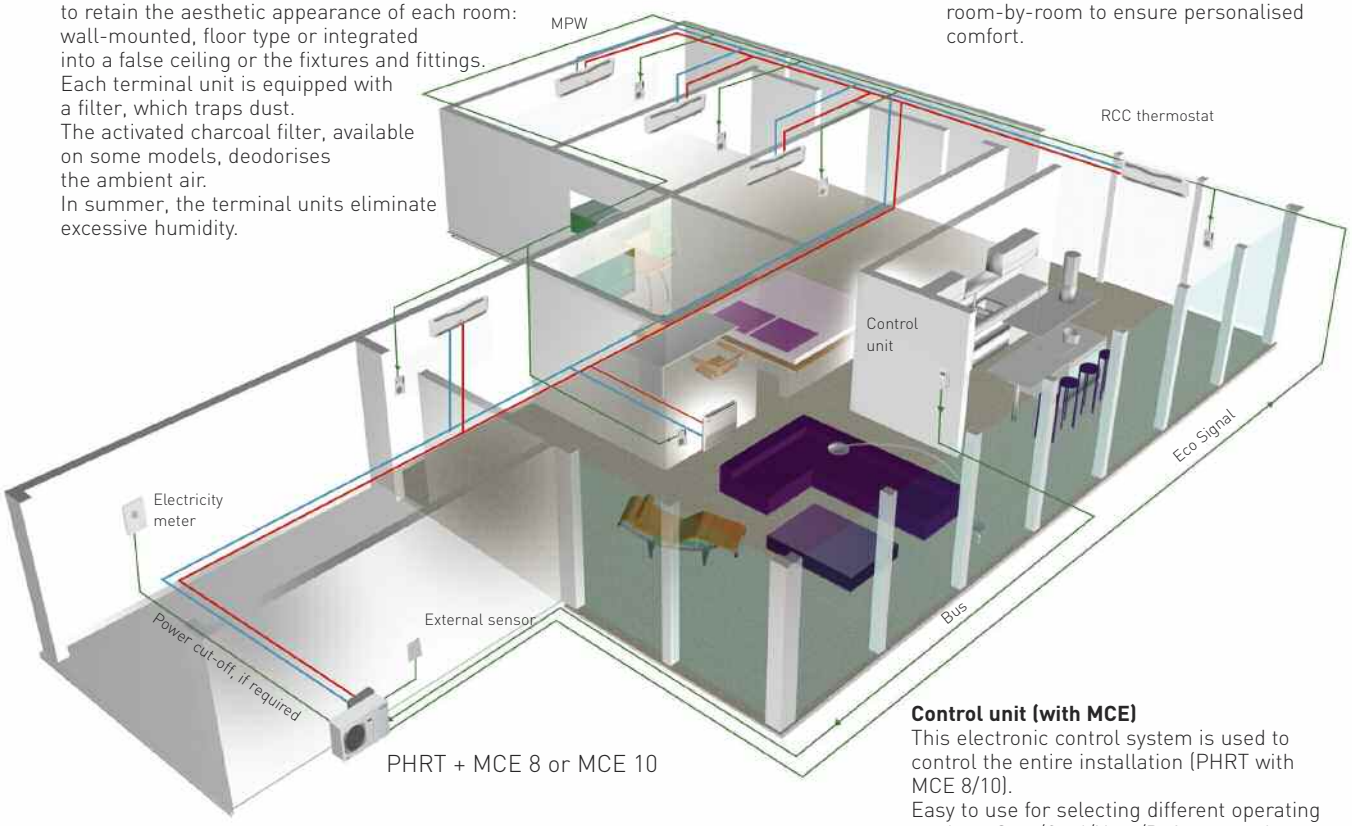
> Silence
Our terminal units, like the PHRT heat pumps, are designed to operate silently

> Health
The terminal units are equipped with filters

Our solution

Terminal units
The various models offer a real choice, making it possible to retain the aesthetic appearance of each room: wall-mounted, floor type or integrated into a false ceiling or the fixtures and fittings.
Each terminal unit is equipped with a filter, which traps dust.
The activated charcoal filter, available on some models, deodorises the ambient air.
In summer, the terminal units eliminate excessive humidity.

RCC thermostats
Each terminal unit is controlled room-by-room to ensure personalised comfort.



PHRT + MCE 8 or MCE 10

Control unit (with MCE)
This electronic control system is used to control the entire installation (PHRT with MCE 8/10).
Easy to use for selecting different operating modes - Stop/Cool/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option).

PHRT 7 / 9 / 12 / 16 heat pumps
Complete hydraulic equipment.

MCE 8 or MCE 10 additional electric heater modules
They possess two power stages (with thermal protection devices); they are managed by the electronic control system, with thermodynamic priority. Possibility of connecting a power cut-off signal.
To save space, they can be installed directly behind a PHRT.

Terminal units

MPW

These models are especially recommended for rooms in which the floor must remain free.

See page 168

8 models, 4 sizes

KPSW

The attractive slimline KPSW units can be installed as console or ceiling mounted units (to leave floor and wall space free): this permits uniform installation throughout the building.

See page 170

6 models, 3 sizes

TWN

TWN fan coil units include 7 sizes in 2 pipe version, each size being designed to match 5 types of installation:

TWN - CV : vertical installation with casing

TWN - CH : horizontal installation or floor model with casing

TWN - NC : horizontal or vertical installation without casing

See page 175

21 models, 7 sizes

CWX 3, 5, 6, 8, 10

For commercial premises

See page 172 to 174

14 models, 5 sizes

COMBINATION SOLUTION

SAVINGS

1 zone underfloor heating-cooling
and 1 zone with Terminal Units

> **Sensation of well-being in both summer and winter**
The temperature of the floor is neither too hot nor too cold.

> **Complete silence**
The floor is heated and cooled in complete silence.

> **Health**
In both summer and winter, the units do not create air currents.

> **Savings**
- Lower consumption of electrical energy, thanks to the high COP and high-efficiency control/management
- Optimised investment throughout the year, with just one system for heating as well as cooling

> **Aesthetically pleasing**
The walls are unobstructed

> **Safety**
The floor is maintained at the correct temperature, which eliminates any risk of likelihood of condensation

The advantages

- Heating-cooling floor in the daytime zone
- Terminal Units in the night-time zone: the preset temperature (heating or air conditioning) is attained very quickly, according to the requirements of the user.

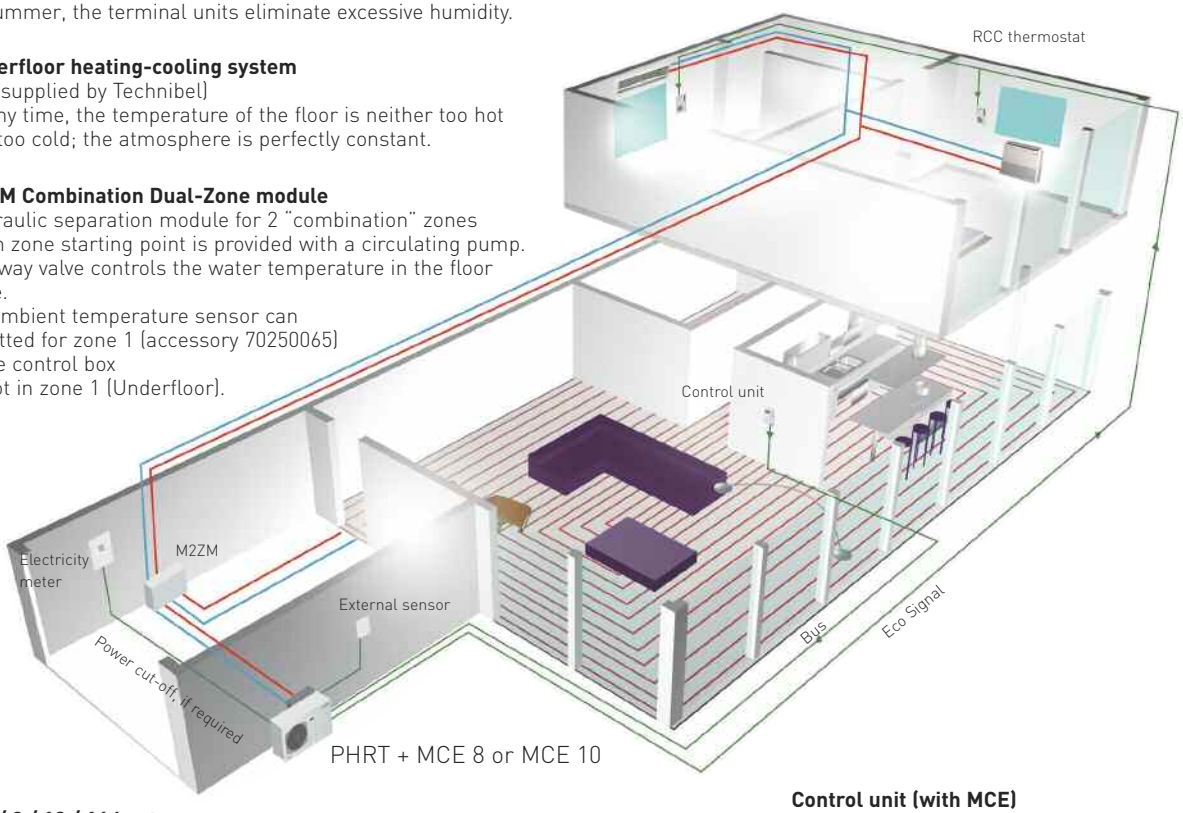
Our solution

Terminal units
The various models offer a real choice, making it possible to retain the aesthetic appearance of each room: wall-mounted, floor type or integrated into a false ceiling or the fixtures and fittings. Each terminal unit is equipped with a filter, which traps dust.
The activated charcoal filter, available on some models, deodorises the ambient air. In summer, the terminal units eliminate excessive humidity.

Underfloor heating-cooling system
(not supplied by Technibel)
At any time, the temperature of the floor is neither too hot nor too cold; the atmosphere is perfectly constant.

M2ZM Combination Dual-Zone module
Hydraulic separation module for 2 "combination" zones
Each zone starting point is provided with a circulating pump.
A 3-way valve controls the water temperature in the floor zone.
An ambient temperature sensor can be fitted for zone 1 (accessory 70250065) if the control box is not in zone 1 (Underfloor).

RCC thermostats
Each terminal unit is controlled room-by-room to ensure personalised comfort



PHRT + MCE 8 or MCE 10

PHRT 7 / 9 / 12 / 16 heat pumps
Complete hydraulic equipment.

MCE 8 or MCE 10 additional electric heater modules
They possess two power stages (with thermal protection devices); they are managed by the electronic control system, with thermodynamic priority.
Possibility of connecting a power cut-off signal.
To save space, they can be installed directly behind a PHRT.

Control unit (with MCE)
This electronic control system is used to control the entire installation.
Easy to use for selecting different operating modes - Stop/Cool/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option).
The housing incorporates an ambient air temperature sensor.

COMBINATION SOLUTION

SAVINGS

1 zone underfloor heating and
1 zone Low Temperature radiators

> **Sensation of well-being in both summer and winter**
The temperature of the floor is neither too hot nor too cold.

> **Complete silence**
The floor is heated and cooled in complete silence.

> **Health**
In both summer and winter, the units do not create air currents.

> **Savings**
- Lower consumption of electrical energy, thanks to the high COP and high-efficiency control/management

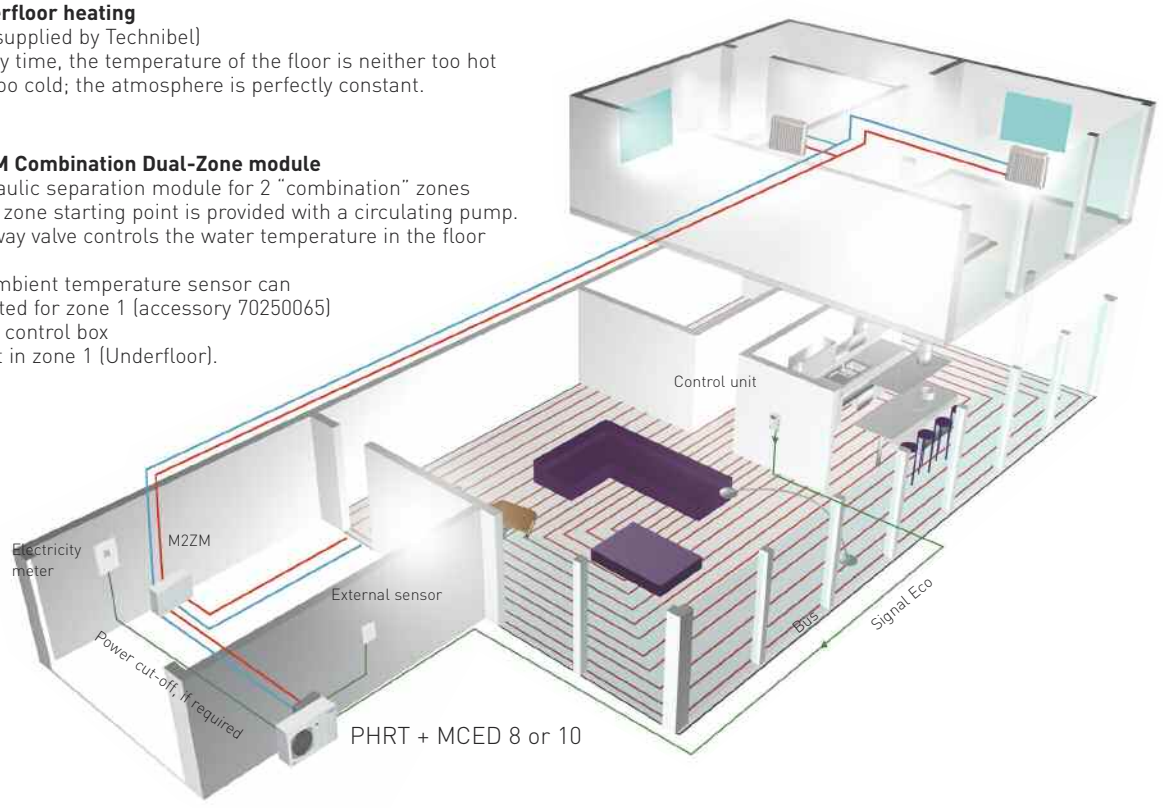
> **Safety**
The floor is maintained at the correct temperature, which eliminates any risk of likelihood of condensation

Our solution

Low Temperature Radiators
(not supplied by Technibel)
These radiators must be fitted with a thermostatic valve.

Underfloor heating
(not supplied by Technibel)
At any time, the temperature of the floor is neither too hot nor too cold; the atmosphere is perfectly constant.

M2ZM Combination Dual-Zone module
Hydraulic separation module for 2 "combination" zones
Each zone starting point is provided with a circulating pump.
A 3-way valve controls the water temperature in the floor zone.
An ambient temperature sensor can be fitted for zone 1 (accessory 70250065) if the control box is not in zone 1 (Underfloor).



PHRT 7 / 9 / 12 / 16 heat pumps
Complete hydraulic equipment.

MCED 8 or 10 additional electric heater modules
They possess two power stages (with thermal protection devices); they are managed by the electronic control system, with thermodynamic priority.
Possibility of connecting a power cut-off signal.
To save space, they can be installed directly behind a PHRT.

Control unit (with MCED)
This electronic control system is used to control the entire installations (PHRT + MCED 8/10).
Easy to use for selecting different operating modes - Stop/Heat/Defrost - and to select a heating regime: Comfort or Economy for the underfloor zone.

UNDERFLOOR HEATING AND COOLING SOLUTION

SAVINGS

1 zone with the option of electric convector heaters in the second zone

> Sensation of well-being in both summer and winter
The temperature of the floor is neither too hot nor too cold.

> Complete silence
The floor is heated and cooled in complete silence.

> Health
In both summer and winter, the units do not create air currents.

> Aesthetically pleasing
The walls are unobstructed.

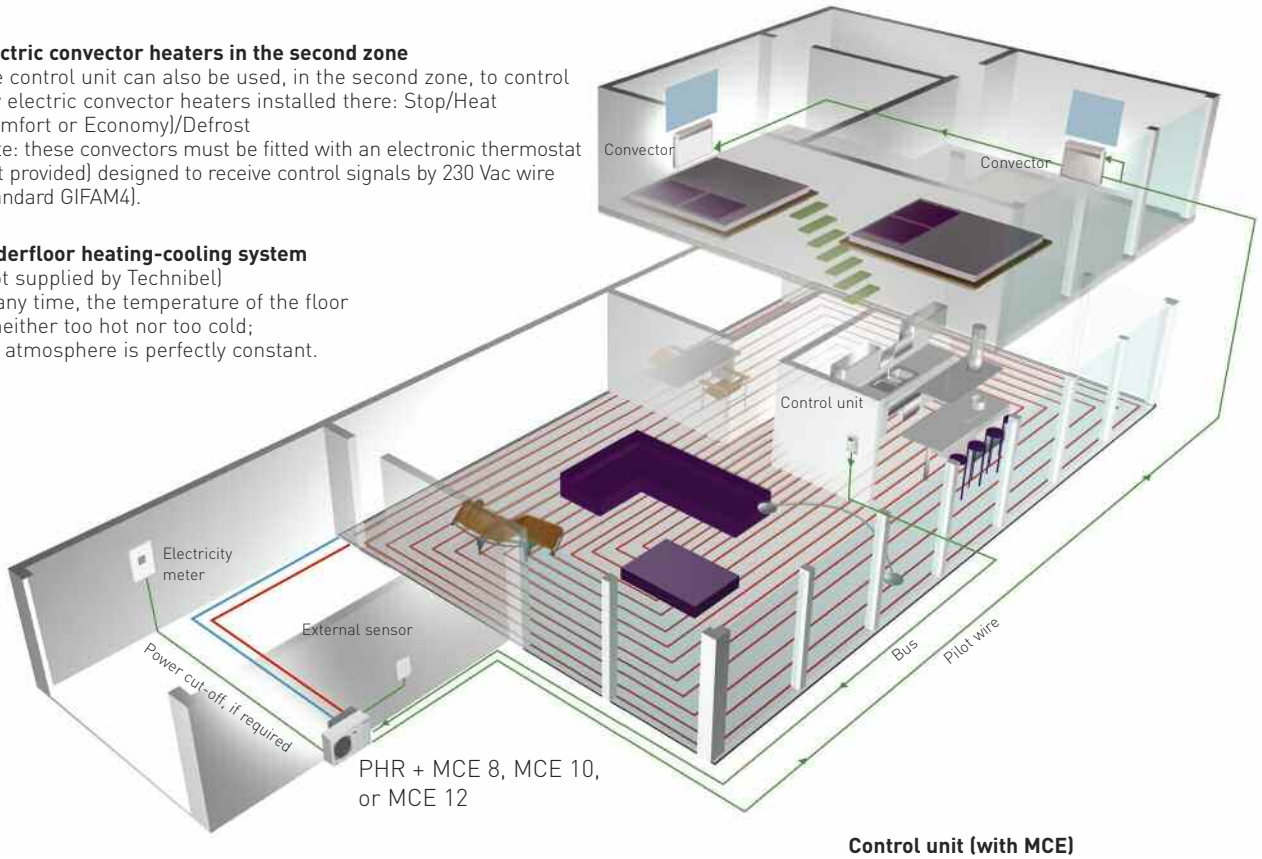
> Savings
- Lower consumption of electrical energy, thanks to the high COP and high-efficiency control/management
- Optimised investment throughout the year, with just one system for heating as well as cooling.
- Low investment for this solution because convectors are controlled in the 2nd zone

> Safety
The floor is maintained at the correct temperature, which eliminates any risk of likelihood of condensation.

Our solution

Electric convector heaters in the second zone
The control unit can also be used, in the second zone, to control any electric convector heaters installed there: Stop/Heat (Comfort or Economy)/Defrost
Note: these convectors must be fitted with an electronic thermostat (not provided) designed to receive control signals by 230 Vac wire (standard GIFAM4).

Underfloor heating-cooling system
(Not supplied by Technibel)
At any time, the temperature of the floor is neither too hot nor too cold;
the atmosphere is perfectly constant.



Control unit (with MCE)
This electronic control system is used to control the entire installation (PHR with MCE 8/10/12).
Easy to use for selecting different operating modes - Stop/Cool/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option).
The housing incorporates an ambient air temperature sensor.

PHR 6 / 8 / 11 / 15 / 17 heat pumps
Complete hydraulic equipment

MCE 8 or MCE 10 additional electric heater modules
They possess two power stages (with thermal protection devices); they are managed by the electronic control system, with thermodynamic priority.
Possibility of connecting a power cut-off signal
To save space, they can be installed directly behind a PHR.

UNDERFLOOR HEATING AND COOLING SOLUTION

2 zones

SAVINGS

> **Sensation of well-being in both summer and winter**
The temperature of the floor is neither too hot nor too cold; the atmosphere is perfectly constant.

> **Complete silence**
The floor is heated and cooled in complete silence.

> **Health**
In both summer and winter, the units do not create air currents

> **Savings**
- Lower consumption of electrical energy, thanks to the high COP and high-efficiency control system
- Optimised investment throughout the year, with just one system for heating as well as cooling.

> **Aesthetically pleasing**
The walls are unobstructed

> **Safety**
The floor is maintained at the correct temperature, which eliminates any risk of likelihood of condensation.

The advantages

- Same sensation of comfort in every room
- Each of the 2 zones (daytime and night-time for example) is equipped with a water temperature control system

Our solution

M2ZP dual-zone floor module
Hydraulic separation module for 2 floor zones
Each zone starting point is provided with a circulating pump and a 3-way valve to control the water temperature. A temperature sensor for the ambient air is supplied with this module.
An ambient temperature sensor can be fitted for zone 1 (accessory 70250065) if the control box is not in zone 1.

Underfloor heating-cooling system
(not supplied by Technibel)
At any time, the temperature of the floor is neither too hot nor too cold;
the atmosphere is perfectly constant.

PHR + MCE 8, 10 or 12

PHR 8 / 11 / 15 / 17 heat pumps
Complete hydraulic equipment

MCE 8, 10 or 12 additional electric heater modules
They possess two power stages (with thermal protection devices); they are managed by the electronic control system, with thermodynamic priority.
Possibility of connecting a power cut-off signal
To save space, they can be installed directly behind a PHR.

Control unit (with MCE)
This electronic control system is used to control the entire installation (PHR with MCE 8/10/12).
Easy to use for selecting different operating modes -Stop/Cool/Heat/Defrost - and to select a heating regime: Comfort or Economy (with hourly programming option).
The housing incorporates an ambient air temperature sensor.

HIGH TEMPERATURE HEAT PUMPS

R 407 C

10 12 175
PHTJ 14/19

65°

PHTJ from 14 to 20 kW
AIR TO WATER

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

> Heating
> Up to -16°C outdoor temperature
> T water outlet maximum : 65°C
> Scroll compressor with intermediate reinjection

- Refrigerant fluid: **R 407 C**
- **Very high COP**
- **Very low sound levels**
- **Compact units:** 1 190 x 340 x 1 235 mm
- **High quality components:**
  Scroll compressor with intermediate reinjection with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....
- **Hydraulic equipment:**
  3-speed circulating pump, safety valve, water pressure gauge, hydraulic filter
- **Functions of the control system:**
  - Reduction of the minimum volume of water
  - Automatic control of the circulating pump (anti-freeze and anti-seize function)
  - Defrosting adjusted according to the outdoor temperature
  - Alarm management by means of event logging
  - External communication via a serial interface (Protocol Modbus)
- **Other advantages:**
  - Improved access to components
  - Keypad/display fitted to the front panel
  - Dividing bulkhead between the fan and the machinery compartment
  - Option of removing the 'control' panel for a wider opening
  - Stringent manufacturing inspections: Helium waterproof test, di-electrical and electrical test, hydraulic test, ...
  - Frost-free protection at the bottom of the tank by means of a resistance

Standard equipment

- Single start-up kit (PHTJ 14)
- Tank tracing resistance
- Water flow switch
- LP switch
- HP switch
- Hydraulic filter (connectable)
- hydraulic equipment

PHTJ 14/19

BOILER SUBSTITUTION WITH 1 RADIATORS ZONE SOLUTION
BOILER BACK-UP SOLUTION

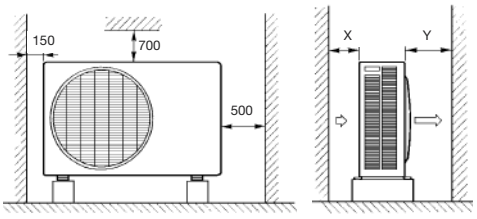
Model			PHTJ 14	PHTJ 14	PHTJ 19
Code		230/1/50	PHTJ 145 V	-	-
		400/3N/50	-	PHTJ 147 V	PHTJ 197 V
HEATING	Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); net values				
	Heating capacity (kW)		**14.3**	**14.1**	**20.7**
	Input power (kW)		4.54	4.34	6.97
	COP		3.15	3.25	2.97
	Conditions :T water inlet/outlet */45°C and T air intake -7/-8°C (DB/WB); net values				
	Heating capacity (kW)		8.6	8.4	12.8
	Input power (kW)		4.43	4.22	6.31
	COP		1.94	1.99	2.03
	Conditions :T water inlet/outlet */55°C and T air intake 7/6°C (DB/WB); net values				
	Heating capacity (kW)		13.65	13.3	20.4
	Input power (kW)		5.33	5.04	7.55
	COP		2.56	2.64	2.70
	Conditions :T water inlet/outlet 55/65°C and T air intake 7/6°C (DB/WB); net values				
	Heating capacity (kW)		13	12.5	20.1
	Input power (kW)		6.39	6.01	9.14
	COP		2.03	2.08	2.2
	Conditions :T water inlet/outlet 30/35°C and T air intake 7/6°C (DB/WB); net values				
	COP		**3.8**	**4.02**	**3.36**
	Water flow (m^3/h) for T water outlet 45°C		2.55	2.43	3.45
	Available head pump (kPa)		70	73	75
	Refrigerant type		R 407 C	R 407 C	R 407 C
	Nb refrigerant circuits		1	1	1
	Nb of compressor		1	1	1
	Expansion tank capacity (l)		2	2	2
	Ø of male water connector		1"	1"	1"
	Sound power level (dBA)		67	67	73
	Sound pressure level* (dBA)		39	39	45
	Length	(mm)	1 190	1 190	1 190
	Depth	(mm)	340	340	340
	Height	(mm)	1 235	1 235	1 235
	Weight	(kg)	141	141	145

* Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

OPERATING LIMITS

HEATING	T outdoor air	- 16°C(DB) / + 43°C (DB)
	T water outlet maximum	+ 65°C
	T water outlet minimum	+ 30°C

PRECAUTIONS FOR INSTALLATION



Dimensions in mm

	X	Y
PHTJ 14 - 19	250	1 000

HIGH TEMPERATURE HEAT PUMPS

R 407 C

10 12 176
PHT 13/16

60°

PHT

from 13 to 16 kW

AIR TO WATER

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

> Heating
> Up to -16°C outdoor temperature
> T water outlet maximum : 60°C
> High pressure scroll compressor

- Refrigerant fluid: **R 407 C**
- **Very high COP**
- **Very low sound levels**
- **Compact units:** 1 190 x 340 x 1 235 mm
- **High quality components:**
  High pressure scroll compressor with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....
- **Hydraulic equipment:**
  3-speed circulating pump, air bleed valve, water pressure gauge, hydraulic filter
- **Functions of the control system:**
  - Reduction of the minimum volume of water
  - Automatic control of the circulating pump (anti-freeze and anti-seize function)
  - Defrosting adjusted according to the outdoor temperature
  - Alarm management by means of event logging
  - External communication via a serial interface (Protocol Modbus)

- **Other advantages:**
  - Improved access to components
  - Keypad/display fitted to the front panel
  - Dividing bulkhead between the fan and the machinery compartment
  - Option of removing the 'control' panel for a wider opening
  - Stringent manufacturing inspections: Helium waterproof test, di-electrical and electrical test, hydraulic test, ...
  - Frost-free protection at the bottom of the tank provided by the cooling circuit (under-cooling loop)

Standard equipment

- Water flow switch
- Under-cooling loop
- LP switch
- HP switch
- Hydraulic filter (connectable)
- Hydraulic equipment

PHT 13/16

BOILER SUBSTITUTION WITH 1 RADIATORS ZONE SOLUTION
BOILER BACK-UP SOLUTION

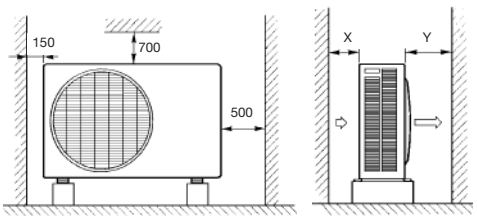
Model			PHT 13	PHT 16
Code		400/3N/50	PHT 137 V	PHT 167 V
HEATING	Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); net values			
	Heating capacity (kW)		**12.3**	**15.4**
	Input power (kW)		4.09	5.13
	COP		3.01	3
	Conditions :T water inlet/outlet */45°C and T air intake -7/-8°C (DB/WB); net values			
	Heating capacity (kW)		7.4	9.3
	Input power (kW)		4.16	5.22
	COP		1.78	1.78
	Conditions :T water inlet/outlet */55°C and T air intake 7/6°C (DB/WB); net values			
	Heating capacity (kW)		11.4	14
	Input power (kW)		4.73	6.03
	COP		2.41	2.32
	Conditions :T water inlet/outlet 30/35°C and T air intake 7/6°C (DB/WB); net values			
	COP		**3.67**	**3.35**
	Water flow (m^3/h) for 40/45°C temperature rate		2.09	2.7
	Available head pump (kPa)		50	68
	Refrigerant type		R 407 C	R 407 C
	Nb refrigerant circuits		1	1
	Nb of compressor		1	1
	Expansion tank capacity (l)		2	2
	Ø of male water connector		1"	1"
	Sound power level (dBA)		67	68
	Sound pressure level* (dBA)		39	40
	Length	(mm)	1 190	1 190
	Depth	(mm)	340	340
	Height	(mm)	1 235	1 235
	Weight	(kg)	135	147

* Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

OPERATING LIMITS

HEATING	T outdoor air	- 16°C(DB) / + 43°C (DB)
	T water outlet maximum	+ 60°C
	T water outlet minimum	+ 30°C

PRECAUTIONS FOR INSTALLATION



Dimensions in mm

	X	Y
PHT 13-16	250	1 000

MEDIUM TEMPERATURE HEAT PUMPS

10 12 169
PHRT 7/16

55°

R 410 A

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

PHRT from 7 to 16 kW

AIR TO WATER

> Heating and cooling

> Water rating 40/45°C in heating mode (and 7/12°C in cooling mode)

> Operating limits :
T outdoor air : -16°C in heating mode (+43°C in cooling mode)
T water outlet maximum : +55°C in heating mode

NF Pompe à chaleur
AFNOR CERTIFICATION : NF 414

AFPAC

EUROVENT CERTIFIED PERFORMANCE

- Refrigerant fluid: **R 410 A**
- **The best COP on the market**
- **The lowest noise levels on the market**
- **Compact units :** 1 190 x 340 x 735 mm
  1 190 x 340 x 1 235 mm
- **High quality components:**
  Scroll compressor with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....
- **Hydraulic equipment:**
  Circulating pump 3 speeds – Expansion tank – Safety valve – Air vent – Water manometer – Hydraulic filter
- **Functions of the control system:**
  - Elimination of the buffer receiver vessel
  - Adjustment of the condensation pressure
  - Automatic control of the circulating pump (anti-freeze and anti-seize function)
  - Defrosting adjusted according to the outdoor temperature
  - Alarm management by means of event logging
  - External communication via a serial interface (Protocol Modbus)

- **Other advantages:**
  - Keypad/display fitted to the front panel
  - Dividing bulkhead between the fan and the machinery compartment
  - Option of removing the "control" panel for a wider opening
  - Stringent manufacturing inspections: Helium waterproof test, di-electrical and electrical test, hydraulic test,...

Equipement Standard

- Single start-up kit (PHRT 7/9/12 mono)
- water flow switch
- proportional head pressure control
- LP switch
- HP switch
- Hydraulic filter (connectable)
- Hydraulic equipment

PHRT 7/9

PHRT 12/16

SOLUTION WITH LOW TEMPERATURE RADIATORS 1 ZONE
BOILER BACK-UP SOLUTION
SOLUTION WITH TERMINAL UNITS
COMBINATION SOLUTION: 1 ZONE WITH UNDERFLOOR HEATING AND COOLING AND 1 ZONE WITH TERMINAL UNITS
COMBINATION SOLUTION: UNDERFLOOR HEATING AND LOW TEMPERATURE RADIATORS

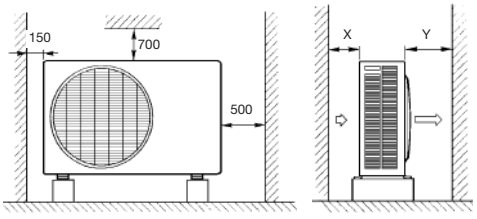
Model			PHRT 7	PHRT 9	PHRT 12	PHRT 16
Code		230/1/50	PHRT 075 F	PHRT 095 F	PHRT 125 F	-
		400/3N/50	-	PHRT 097 F	PHRT 127 F	PHRT 167 F
				Mono/Tri	Mono/Tri	
HEATING	Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); net values					
	Heating capacity (kW)		**7.2**	**9.17 / 9.2**	**10.5 / 12.4**	**15**
	Input power (kW)		2.65	3.19 / 3.19	3.62 / 4.06	4.92
	COP		2.72	2.87 / 2.88	2.9 / 3.05	3.05
	Conditions :T water inlet/outlet */45°C and T air intake -7/-8°C (DB/WB); net values					
	Heating capacity (kW)		**4.6**	**5 / 5.05**	**5.88 / 6.8**	**8.51**
	Input power (kW)		2.87	3.23 / 3.23	3.77 / 4.25	5.38
	COP		1.6	1.55 / 1.56	1.56 / 1.6	1.58
	Conditions :T water inlet/outlet */55°C and T air intake 7/6°C (DB/WB); net values					
	Heating capacity (kW)		**6**	**8.25 / 8.3**	**9.38 / 11.7**	**13.6**
	Input power (kW)		3.04	3.75 / 3.75	4.04 / 4.73	5.96
	COP		1.97	2.17 / 2.21	2.32 / 2.47	2.28
	Conditions :T water inlet/outlet 40/45°C and T air intake 7/6°C (DB/WB); gross values ;Eurovent					
	Heating capacity (kW)		**7.25**	**9.24 / 9.27**	**10.65 / 12.5**	**15.2**
	Input power (kW)		2.56	3.12 / 3.1	3.48 / 4.1	4.83
	COP		2.83	2.96 / 2.99	3.06 / 3.05	3.15
	Conditions :T water inlet/outlet 30/35°C and T air intake 7/6°C (DB/WB); net values					
	COP		**3.33**	**3.4 / 3.44**	**3.66 / 3.84**	**3.94**
	Water flow (m^3/h)		1.19	1.58 / 1.55	1.87 / 2.16	2.7
	Available head pump (kPa)		57	47 / 47	66 / 53	68
COOLING	Conditions :T water inlet/outlet 12/7°C and T air intake 35°C (DB); gross values;Eurovent					
	Heating capacity (kW)		**5.90**	**7.10 / 7.10**	**8.56 / 9.00**	**11.40**
	Input power (kW)		2.55	3.14 / 3.09	3.33 / 3.73	4.98
	EER		2.31	2.26 / 2.30	2.57 / 2.41	2.29
	Water flow (m^3/h)		1.01	1.22 / 1.22	1.48 / 1.51	1.98
	Available head pump (kPa)		64	59 / 59	82 / 80	84
	Refrigerant type		R 410 A	R 410 A	R 410 A	R 410 A
	Nb refrigerant circuits		1	1	1	1
	Nb of compressor		1	1	1	1
	Expansion tank capacity (l)		2	2	2	2
	Ø of male water connector		3/4"	3/4"	1"	1"
	Sound power level (dBA)		65	65	67	68
	Sound pressure level** (dBA)		37	37	39	40
	Length	(mm)	1 190	1 190	1 190	1 190
	Depth	(mm)	340	340	340	340
	Height	(mm)	735	735	1 235	1 235
	Weight	(kg)	98	98	128	133

* Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

OPERATING LIMITS

HEATING	T outdoor air	- 16°C(DB) / + 43°C (DB)	COOLING	T outdoor air	+ 10°C(DB) / + 43°C (DB)
	T water outlet maximum	+ 55°C		T water outlet maximum	+ 20°C
	T water outlet minimum	+ 25°C		T water outlet minimum	+ 5°C

PRECAUTIONS FOR INSTALLATION



Dimensions in mm

	X	Y
PHRT 7-9	150	1 000
PHRT 12 - 16	250	1 000

LOW TEMPERATURE HEAT PUMPS

10 12 160
PHR 6/20

40°

R 410 A

ÉNERGIES RENOUVELABLES
RENEWABLE ENERGIES

SAVINGS

PHR from 6 to 17 kW

AIR TO WATER

- > Heating and cooling
- > Water rating 30/35°C in heating mode (and 18/23°C in cooling mode)
- > Operating limits :
  T outdoor air : -16°C in heating mode (+43°C in cooling mode)
  T water outlet maximum : +40°C in heating mode

NF Pompe à chaleur
AFNOR CERTIFICATION : NF 414

AFPAC

EUROVENT CERTIFIED PERFORMANCE

- Refrigerant fluid: **R 410 A**
- **The best COP on the market**
- **The lowest noise levels on the market**
- **Compact units:** 1 190 x 340 x 735 mm
  1 190 x 340 x 1 235 mm
- **High quality components:**
  Scroll compressor (except PHR6 with rotary compressor) with sound insulation – high performance heat exchanger with fins for the R 410 A – axial fan motor – heat exchanger with AISI 316 stainless steel plates and heat insulation, etc....
- **Hydraulic equipment:**
  3-speed circulating pump, expansion tank, safety valve, air bleed valve, water pressure gauge, hydraulic filter
- **Functions of the control system:**
  - Reduction of the minimum volume of water
  - Adjustment of the condensation pressure
  - Automatic control of the circulating pump (anti-freeze and anti-seize function)
  - Defrosting adjusted according to the outdoor temperature
  - Alarm management by means of event logging
  - External communication via a serial interface (Protocol Modbus)

- **Other advantages:**
  - Improved access to components
  - Keypad/display fitted to the front panel
  - Dividing bulkhead between the fan and the machinery compartment
  - Option of removing the 'control' panel for a wider opening
  - Stringent manufacturing inspections: Helium water-proof test, di-electrical and electrical test, hydraulic test, ...

Equipement Standard

- Single start-up kit (PHR 6/8/11 mono)
- water flow switch
- proportional head pressure control
- LP switch
- HP switch
- Hydraulic filter (connectable)
- Hydraulic equipment

PHR 6/8

PHR 11/15/17

UNDERFLOOR HEATING AND COOLING SOLUTIONS (1 ZONE OR 2 ZONES)

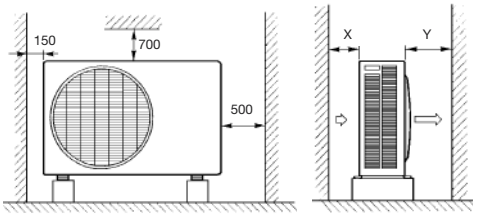
Model		PHR 6	PHR 8	PHR 11	PHR 15	PHR 17
Code	230/1/50	PHR 065 F	PHR 085 F	PHR 115 F	-	-
	400/3N/50	-	PHR 087 F	PHR 117 F	PHR 157 F	PHR 177 F
			Mono/Tri	Mono/Tri		
	Conditions :T water inlet/outlet 30/35°C and T air intake 7/6°C (DB/WB); net values					
HEATING	Heating capacity (kW)	**6.75**	**8.4 / 8.55**	**11.2 / 11.1**	**14.3**	**16.8**
	Input power (kW)	1.86	2.2 / 2.18	2.85 / 2.7	3.64	4.57
	COP	3.63	3.82 / 3.92	3.93 / 4.11	3.93	3.68
	Conditions :T water inlet/outlet */35°C and T air intake -7/-8°C (DB/WB); net values					
	Heating capacity (kW)	**4.2**	**4.71 / 4.8**	**6.65 / 6.5**	**7.63**	**9.07**
	Input power (kW))	1.91	2.19 / 2.19	3.17 / 2.9	3.71	4.51
	COP	2.2	2.15 / 2.19	2.1 / 2.24	2.06	2.01
	Conditions :T water inlet/outlet 30/35°C and T air intake 7/6°C (DB/WB); gross values ;Eurovent					
	Heating capacity (kW)	**6.8**	**8.45 / 8.6**	**11.25 / 11.2**	**14.5**	**17**
	Input power (kW)	1.76	2.13 / 2.1	2.7 / 2.56	3.51	4.47
	COP	**3.86**	**3.97 / 4.1**	**4.17 / 4.38**	**4.13**	**3.8**
	Water flow (m^3/h)	1.19	1.44	1.91	2.48	2.81
	Available head pump (kPa)	50	42	55	65	76
	Conditions :T water inlet/outlet 23/18°C and T air intake 35°C (DB); gross values;Eurovent					
COOLING	Heating capacity (kW)	**6.7**	**8.7 / 8.5**	**9.45 / 9.5**	**14.6**	**16.5**
	Input power (kW)	2.08	2.94 / 2.77	3.33 / 3.12	4.37	6
	EER	3.22	2.96 / 3.07	2.84 / 3.04	3.34	2.75
	Water flow (m^3/h)	1.15	1.48	1.62	2.48	2.74
	Available head pump (kPa)	50	41	72	65	79
	Refrigerant type	R 410 A	R 410 A	R 410 A	R 410 A	R 410 A
	Nb refrigerant circuits	1	1	1	1	1
	Nb of compressor	1	1	1	1	1
	Expansion tank capacity (l)	2	2	2	2	2
	Ø of male water connector	3/4"	3/4"	1"	1"	1"
	Sound power level (dBA)	65	65	67	68	68
	Sound pressure level** (dBA)	37	37	39	40	40
	Length (mm)	1 190	1 190	1 190	1 190	1 190
	Depth (mm)	340	340	340	340	340
	Height (mm)	735	735	1 235	1 235	1 235
	Weight (kg)	82	90	113	127	131

* Sound pressure: this level corresponds to that of a unit installed outdoors (free sound field), on a reflective surface, with the measurement being taken at a distance of 10 m.

OPERATING LIMITS

HEATING	T outdoor air	- 16°C(DB) / + 20°C (DB)	COOLING	T outdoor air PHR 6/8/11	0°C(DB) / + 43°C (DB)
	T water outlet maximum	+ 40°C		T outdoor air PHR 15	- 3°C(DB) / + 43°C (DB)
	T water outlet minimum	+ 25°C		T outdoor air PHR 17	- 7°C(DB) / + 43°C (DB)
				T water outlet maximum	+ 25°C
				T water outlet minimum	+ 5°C (except PHR 6 : + 10°C)

PRECAUTIONS FOR INSTALLATION



Dimensions in mm

	X	Y
PHR 6 - 8	150	1 000
PHR 11 - 15 - 17	250	1 000

ACCESSORIES

HEAT PUMPS + MCE SOLUTIONS

Type		Code
Set of 2 flexible water pipes		
Length 1 m Ø 3/4"	PHRT 7/9 - PHR 6/8	70600054
Length 1 m Ø 1"	PHTJ - PHT - PHRT 12/16 - PHR 11/15/17	70600055
Remote control keyboard and display	PHTJ - PHT - PHRT - PHR	70250055
Condensate tray heater kit	PHRT - PHR	70200055

Type		Code	SOLUTIONS					
			Terminal units	Mixed Underfloor + Terminal units	Mixed Underfloor + LT radiators	Underfloor 1 zone	Underfloor 2 zones	1 zone radiators
Additional electric heater module MCE 8 3 x 2,5 kW - 230/1/50 or 400/3N/50 with control unit	PHTJ PHT PHRT PHR	MCE 089Z	•	•		•	•	• • •
Additional electric heater module MCED 8 3 x 2,5 kW - 230/1/50 or 400/3N/50 with control unit	PHRT	MCED 089Z			•			
Additional electric heater module MCE 10 3 x 3,3 kW - 400/3N/50 with control unit	PHTJ 14 tri/19 PHT PHRT 12 tri/16 PHR 11 tri /15/17	MCE 107Z	•	•		•	•	• • •
Additional electric heater module MCED 10 3 x 3,3 kW - 400/3N/50 with control unit	PHRT 12 tri/16	MCED 107Z			•			
Additional electric heater module MCE 12 3 x 4 kW - 400/3N/50 with control unit	PHTJ 19 PHR 17	MCE 127Z	•			•	•	•
Additional electric heater module MCEDB 12 for Bi-PAC (2 heat pumps in parallel) 3 x 4 kW - 400/3N/50 with control unit	PHTJ 14 PHT PHRT	MCEDB 127Z						• • •
Complete kit for connexion MCE(D) 8 with PHRT 7/9 Complete kit for connexion MCE 8 with PHR 6/8		70600126	•	•	•	•	•	•
Complete kit for connexion MCE 8-MCE 10 with PHTJ 19 Complete kit for connexion MCE 8-MCE 10 with PHT 13/16		70600130						• •
Complete kit for connexion MCE(D) 8-MCE(D) 10 with PHRT 12/16 Complete kit for connexion MCE 8-MCE 10 with PHR 11/15/17		70600127	•	•	•	•	•	•
Complete kit for connexion MCE 12 with PHR 17		70600131				•	•	
Complete kit for connexion MCE 12 with PHTJ 19		70600132						•
M2ZP Combination Dual-Zone module		M2ZP5Z					•	
M2ZM Combination Dual-Zone module		M2ZM5Z		•	•			
Ambient temperature sensor for zone 1 if the control box is not in Zone 1		70250065		•	•		•	
Water temperature sensor 3.5 m	PHRT PHTJ - PHT	70250077 70250077						• •

HEAT PUMPS + MCE SOLUTIONS

Type		Code	SOLUTIONS					
			Terminal units	Mixte Underfloor + Terminal units	Mixte Underfloor + radiators BT	Underfloor 1 zone	Underfloor 2 zones	1 zone radiators
Isolated mixing tank								
35 liters (6 water inlets/outlets for connection on the circuit)	PHRT	70600118	•	•	•			•
35 liters (6 water inlets/outlets for connection on the circuit)	PHT 13/16	70600118						•
35 liters (6 water inlets/outlets for connection on the circuit)	PHTJ	70600118						•
70 liters (6 water inlets/outlets for connection on the circuit)	PHTJ	70600218						•
70 liters (6 water inlets/outlets for connection on the circuit)	PHRT	70600218	•	•	•			•
70 liters (6 water inlets/outlets for connection on the circuit)	PHT	70600218						•
Flow adjustment valve	PHRT 7/9/12	70600123			•			•
	PHTJ 14 - PHT 13	70600123						•
	PHRT 16	70600124			•			•
	PHTJ 19 - PHT 16	70600124						•
Dirt separator for heat pump circuit 1"	PHTJ - PHRT - PHT 13/16	70600114			•			•
Kit for preparation of domestic hot water including - 1 sanitary hot water cylinder 300 l with additional electrical heating 3 kW (in 230 Vac) - 1 solenoid valve 3 way 1" for the cylinder supply (ON/OFF 230 Vac) - 1 regulation box (with set of 2 sensors) - 1 safety group with 7 bar safety valve	PHTJ - PHT - PHRT	KPECS300E5Z						•
Kit for preparation of domestic hot water including - 1 sanitary hot water cylinder 500 l with additional electrical heating 3 kW (in 230 Vac) - 1 solenoid valve 3 way 1" for the cylinder supply (ON/OFF 230 Vac) - 1 regulation box (with set of 2 sensors) - 1 safety group with 7 bar safety valve + BI-PAC SOLUTIONS	PHTJ - PHT 16 PHRT 12/16	KPECS500E5Z						•

ACCESSORIES

BOILER BACK-UP SOLUTION

Type		Code
Set of 2 flexible water pipes		
Length 1 m Ø 3/4"	PHRT 7/9	70600054
Length 1 m Ø 1"	PHTJ - PHT - PHRT 12/16	70600055
Remote control keyboard and display	PHTJ - PHT - PHRT	70250055
Condensate tray heater kit	PHRT	70200055

Type			Code	SOLUTION Boiler back-up solution A	B	C
Ambient temperature sensor for zone 1 if the control box is not in Zone 1			70250065		•	•
BI-PAC control board (2 heat pumps in parallel) (to be fitted in a control box)			70600117	•	•	•
Isolated mixing tank						
35 liters (6 water inlets/outlets for connection on the circuit)		PHRT	70600118	•	•	•
35 liters (6 water inlets/outlets for connection on the circuit)		PHTJ - PHT	70600118	•	•	•
70 liters (6 water inlets/outlets for connection on the circuit)		PHRT	70600218	•	•	•
70 liters (6 water inlets/outlets for connection on the circuit)		PHTJ - PHT	70600218	•	•	•
Kit for heat pump connection including:						
- 1 isolated decoupling bottle with sensor seating		PHTJ 14 - PHT 13 - PHRT 7/9/12	70600112	•	•	•
		PHTJ 19 - PHT 16 - PHRT 16	70600122	•	•	•
- 1 flow adjustment valve						
Flow adjustment valve in case of BI-PAC installation: 1 valve per heat pump - mandatory if not installed	10/40 l/mm	PHTJ 14 - PHT 13 - PHRT 7/9/12	70600123	•	•	•
	20/70 l/mm	PHTJ 19 - PHT 16 - PHRT 16	70600124	•	•	•
Dirt separator for heat pump circuit	1"	PHTJ - PHT - PHRT	70600114	•	•	•
Boiler make-up valve (by-pass or mixing), motor-driven DN 20 - 3/4" G Kvs 6 If not installed, • Valve recommended for K 60 D 066 Z and K 60 D 068 Z (see hydraulic diagrams), • Valve mandatory for K 60 D 068 Z with floor heating/cooling, • Valve mandatory for K 60 D 067 Z		PHTJ - PHT - PHRT	70600116	•	•	•
Regulation kit (control box + electrical control box + set of sensors) **Example A :** Back-up heat pump – Zone 1 radiators – On/Off operation on boiler and/or make-up valve (by-pass valve not supplied (available as accessory)			K60D066Z	•		
Regulation kit (control box + electrical control box + set of sensors) **Example B :** Back-up heat pump – zone 1 radiators or zone 1 floor cooling/heating – Proportional operation on mixing valve (valve not supplied, available as accessory)			K60D067Z		•	
Regulation kit (control box + electrical control box + set of sensors) **Example C :** Back-up heat pump – 2 zones mixed floor + radiators (example C1) or 2 zones floor heating/cooling (example C2) Proportional operation of floor outgoing valves (valve not supplied) On/Off action on make-up valve (bypass valve not supplied, available as accessory)			K60D068Z			•

RESIDENTIAL SOLUTIONS WITH AIR/WATER HEAT PUMPS

Remote control keyboard and display

Condensate tray heater

Kit for heat pump connection MCE(D) / PAC

Flexible water pipes

Essential to avoid the transmission of noises (compressor and circulator vibrations).

MCE 8/10/12

		MCE(D) 8	MCE(D) 10	MCE(D) 12	M2ZP / M2ZM
Length	(mm)	260	260	260	750
Height	(mm)	425	475	425	660
Depth	(mm)	226	226	226	300
Weight	(kg)	9	10	10	40

M2ZM / M2ZP

Decoupling bottle

		Decoupling bottle	Mixing tank	
			35 l	70 l
Length	(mm)	480	500	670
Diameter	(mm)	80	300	350
Empty weight	(kg)	1,6	15,5	24

Mixing tank

Dirt separator

Boiler valve

Control unit

DHW tank

Electrical control box

Ambient temperature sensor

TOOLS

BOILER SUBSTITUTION/1 ZONE RADIATORS

Commercial documentation Heat pumps with radiators (1 zone) code 10 13 171
For the end user.

Mémo Heat pumps with radiators (1 zone) code 10 16 019
Very small but it doesn't replace the installation manuals!
This document gives some synthesized information useful for installing this configuration.

Mémento Heat pumps with radiators (1 zone) code 10 16 018
Thanks to a lot of schemes, it helps diagnosing, identifying of the existing installation.

Inquiries file about the existing installation
code 10 16 011
This document is a tool to get information on the existing installation in order to select the right product.

Application manual Heat pumps with radiators (1 zone) code 10 16 017
This document shows the Technibel solutions in accordance with the existing installation.

BOILER BACK UP SOLUTION

Commercial documentation « Heat pumps with the boiler back-up solution » code 10 13 157
For the end user.

Memo "Boiler back-up solution" code 10 16 014
Very small but it doesn't replace the installation manuals!
This document gives some synthesized information useful for installing this configuration.

Memento code 10 16 012
Thanks to a lot of schemes, it helps diagnosing, identifying of the existing installation.

Inquiries file about the existing installation
Code 10 16 011
This document is a tool to get information on the existing installation in order to select the right product.

Application manual code 10 16 013
This document shows the Technibel solutions in accordance with the existing installation.

UNDERFLOOR HEATING AND COOLING SOLUTION

Commercial documentation "UNDERFLOOR HEATING AND COOLING SOLUTION"
Code 10 13 140
For the end user

Memo "New installation" code 10 16 015
Very small but it doesn't replace the installation manuals
This document gives some synthesized information useful for installing this configuration.

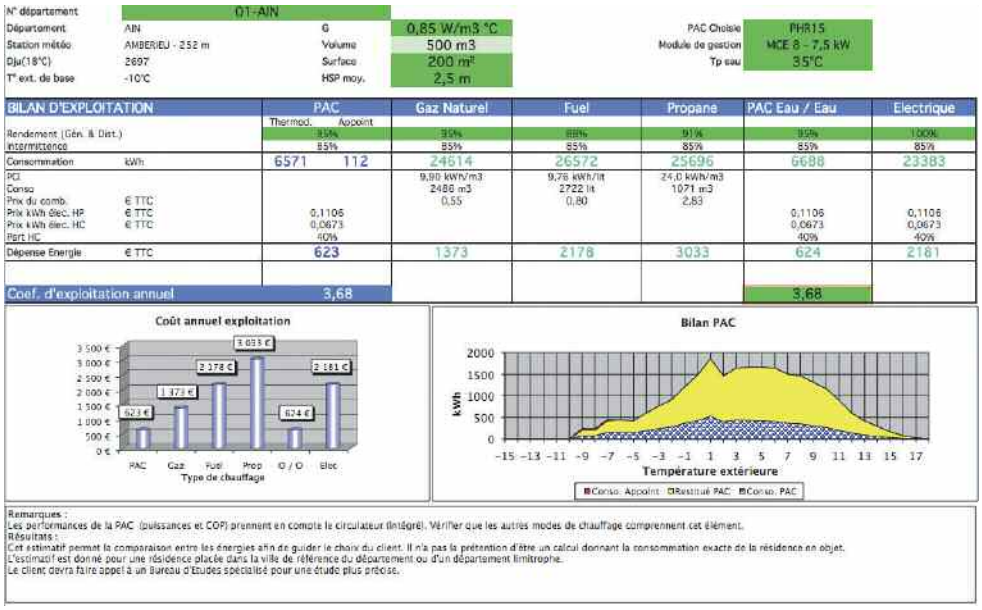
And information on our website : **www.technibel.com**

TOOLS

ASSISTANCE WITH SELECTION

PHR-Conso

calculates and compares the cost-effectiveness of heat pump systems against fossil fuel systems for domestic under-floor heating / cooling applications.



PHRT-Relève calculates heat pump dimensions in boiler switchover applications and estimates the savings generated.