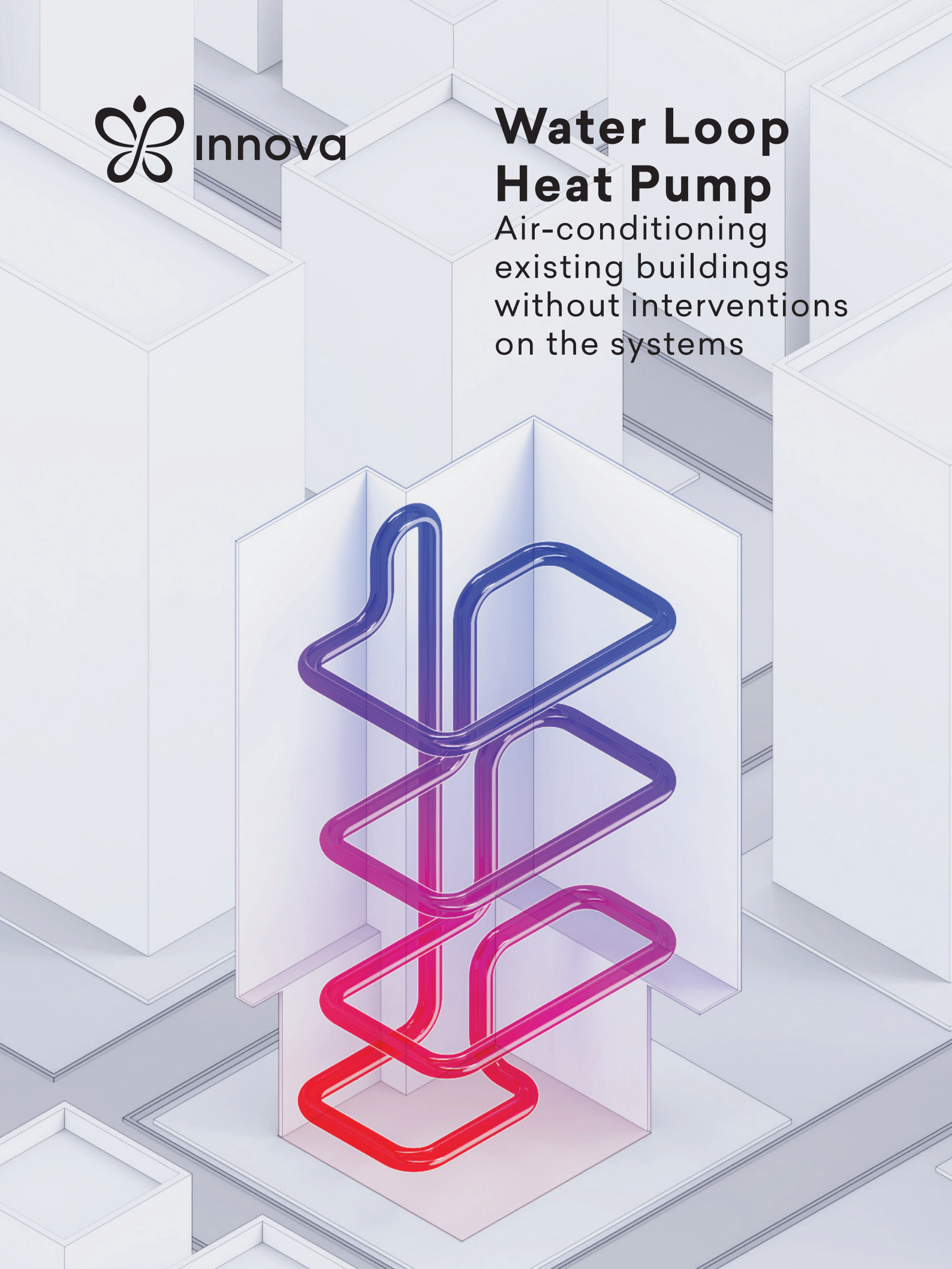
innova

Water Loop Heat Pump

Air-conditioning existing buildings without interventions on the systems



Air-conditioning of existing buildings without interventions on the systems, now it's possible

Water Loop Heat Pump

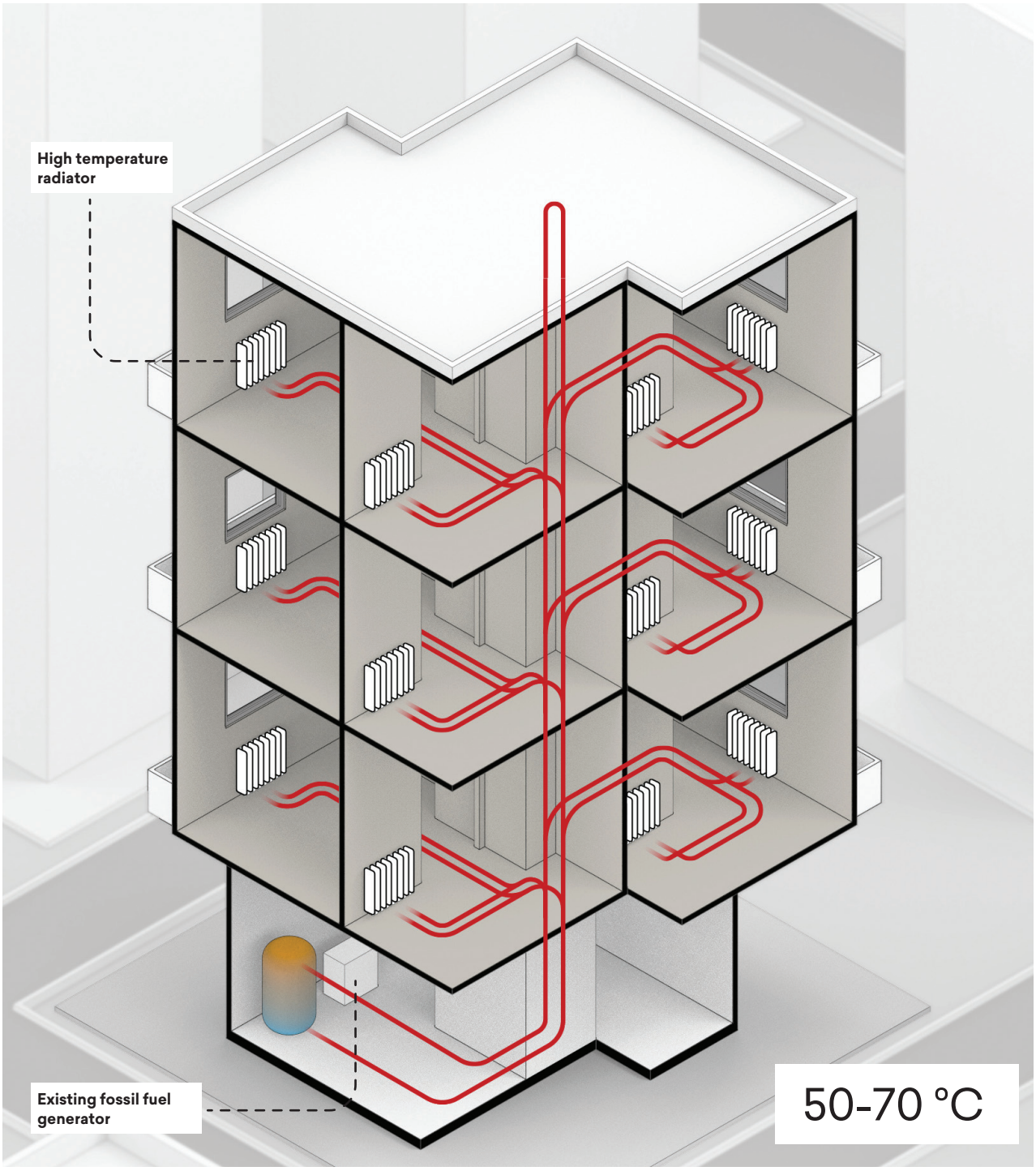
The complete upgrading of buildings without intervention on existing facilities.

To date, upgrading a building means replacing the boiler with a heat pump system by making additional interventions on the existing, almost always uninsulated, piping in order to circulate cold water and thus air condition in summer. Invasive interventions, often overlooked for cost, that do not allow full utilization of the heat pump in summer mode. With WLHP - Water Loop Heat Pump - it is now possible to upgrade a building without intervention on existing piping.

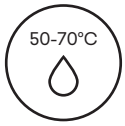
WLHP is a range of compact and efficient water/air heat pump terminals to be installed in any room as a replacement for radiators. The water in the system will be circulated all year round at a neutral temperature (20-30 °C), thus avoiding condensation in summer on uninsulated pipes-it will be WLHP that will bring the water temperature to the optimal level so that each individual room can be heated or cooled.

Traditional building with radiators

Centralized system with hot water for winter heating



FOSSIL FUEL ENERGY



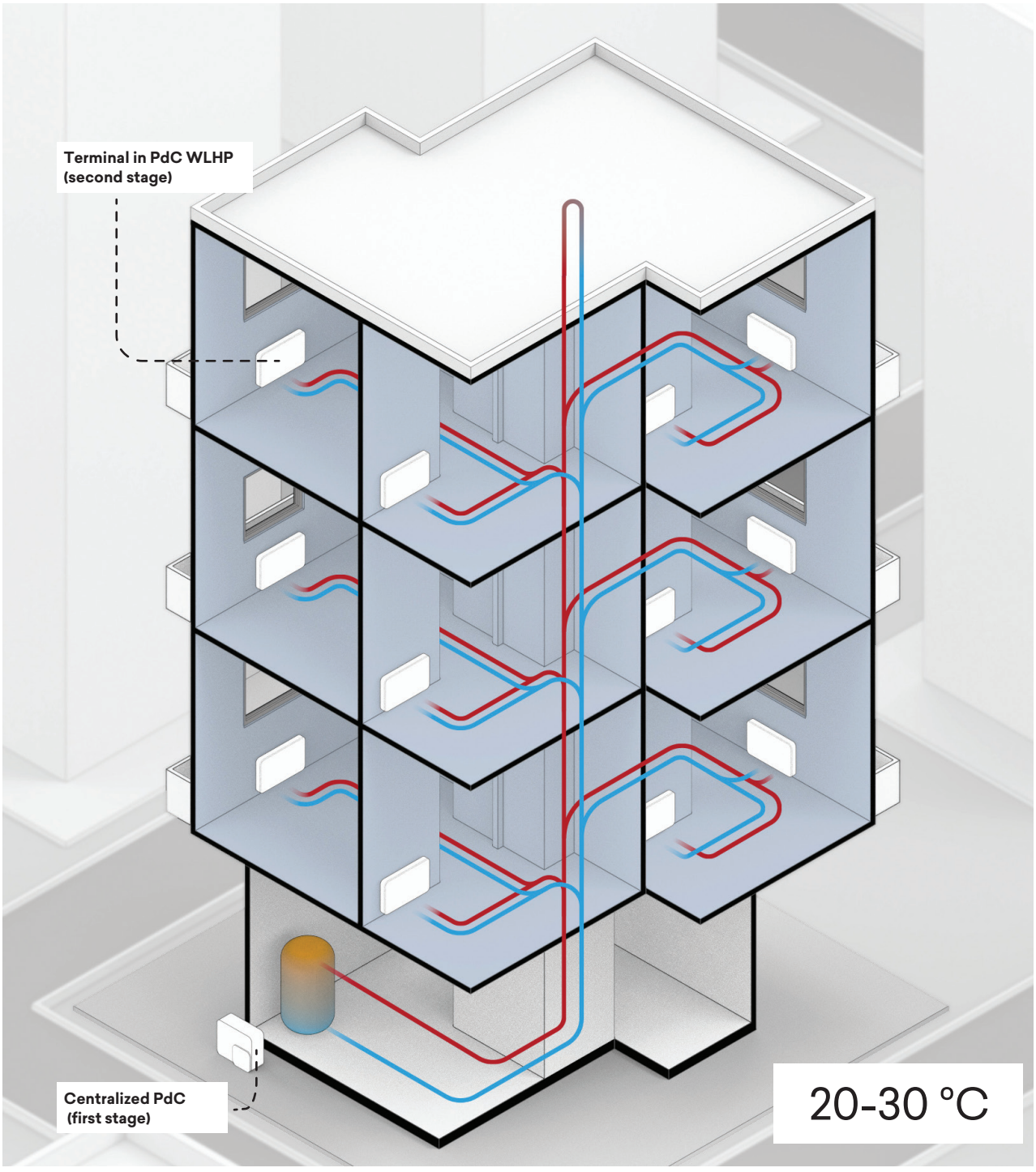
HIGH TEMPERATURE WATER CIRCLE

HEATING ONLY

HIGH HEAT LOSS

Building upgraded with WLHP terminals

Central water system for winter heating and summer cooling



RENEWABLE ENERGY

LOW TEMPERATURE WATER CIRCLE

HEATING AND COOLING FUNCTION ALSO SIMULTANEOUS

TOTAL ENERGY RECOVERY

Installation on existing system:

Today, the installation of hot and cold systems on existing - and dated - systems is faced with the presence of uninsulated pipes.
Therefore, it is necessary to make heavy and invasive investments to work on the pipes - or, to make a partial system, only in hot, which does not give the desired benefit in summer and requires additional systems, for example, fixed air conditioners.

Simplicity, flexibility of use, efficiency:

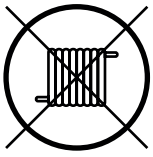
With the WLHP, Water Loop Heat Pump system, the building will benefit from heat and cold without any intervention on existing pipes. WLHP water/air heat pumps easily replace traditional wall radiators and operate with a water loop at neutral temperature (20-30 °C) that does not generate condensation on existing pipes.

Advantages of water at neutral temperature:

The main outdoor generator, in combination with the WLHP terminals, must "simply" maintain the water temperature at a neutral level (20-30 °C) throughout the year-with thus minimized consumption levels and enormously higher efficiency than in a classic installation where operation must be at 45 °C in winter and 7 °C in summer.

Low flow rate even in air conditioning

High efficiency



Installation on existing system

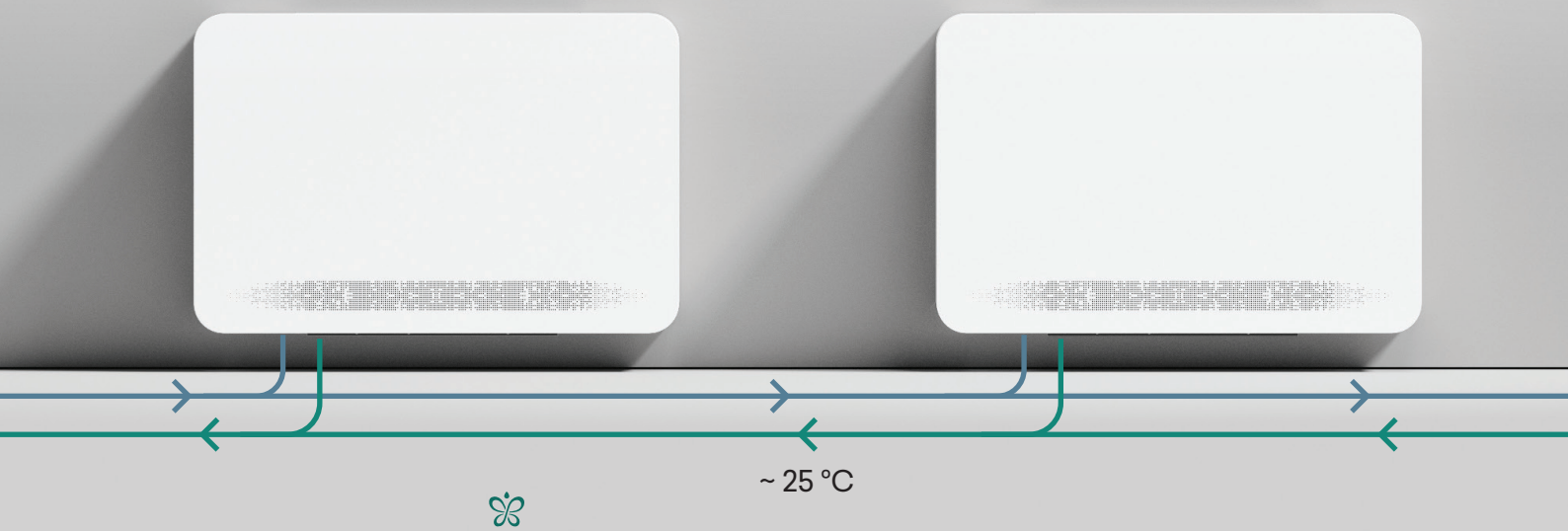
Don't require any external unit

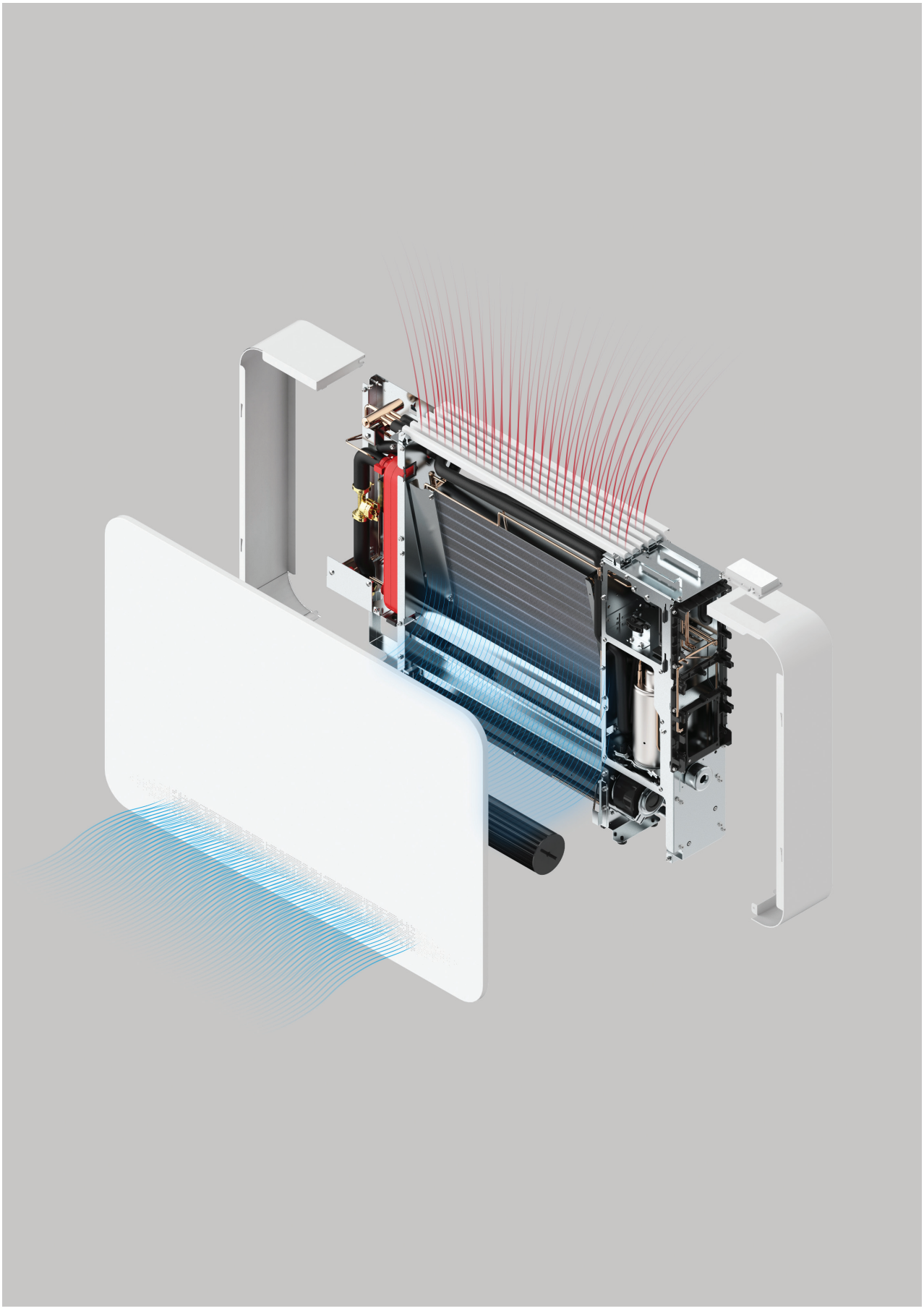
WLHP: the heat pump terminals compact water/air.

With WLHP, INNOVA reinterprets the world of water/air heat pumps.
Elegant, compact, in 3 different sizes:
WLHP is the ideal replacement for existing radiators, being able to guarantee the most correct temperature in every season.
Every technical detail has been reviewed and reinterpreted to make WLHP suitable for domestic applications, in every room, even in the bedroom:
reliability, robustness ... quietness ...
all perfectly adequate for domestic applications.

WLHP terminal features

- **DC Inverter Compressor**: modulates power to the actual need ensuring an ideal temperature level.
- **Tangential fan Inverter**: in continuous modulation gradually dampens the turns when the set temperature is reached, thus ensuring maximum comfort.
- **Wide range of power** ratings facilitating installation in areas with limited space availability.
- **Propane gas R290**: GWP 3.
- **Design and aesthetics** in only 14 cm depth.





The advantages of a plant with WLHP terminals

Improved comfort

- **Use of piping** existing and limited interior work.
  The WLHP heat pump terminal connects to existing radiator connection points.
- **Heating, summer cooling and dehumidification**
  In one device.
- **Complete autonomy** Of room-by-room operation.
  Ability to have **simultaneous** heating and cooling **in different rooms.**
- **Independent daily and weekly programming**
  for each room via APP.
- **Optimal comfort** due to the system autonomously and quickly adapting to environmental and heat load conditions.
- **Elimination of pollutant and CO2 emissions.**

Reduced payback time

- **High seasonal efficiency** of the whole system.
- Use of renewable energy.
- **Improving the energy class** of the building.
- **Elimination of thermal losses** in the distribution system from the central heating plant to each individual dwelling.
- **Reduction of more than 50%** in primary energy compared with a combustion system.

Reduced energy consumption

- **Reduced operating costs.**
- **Elimination of costs required for gas connection,** chimney, and related safety according to legal standards of combustion systems.
- **Simple installation** requiring no skilled labor.
- Extremely low **investment and installation time.**
- Connection to the **electrical utility of the individual apartment.**

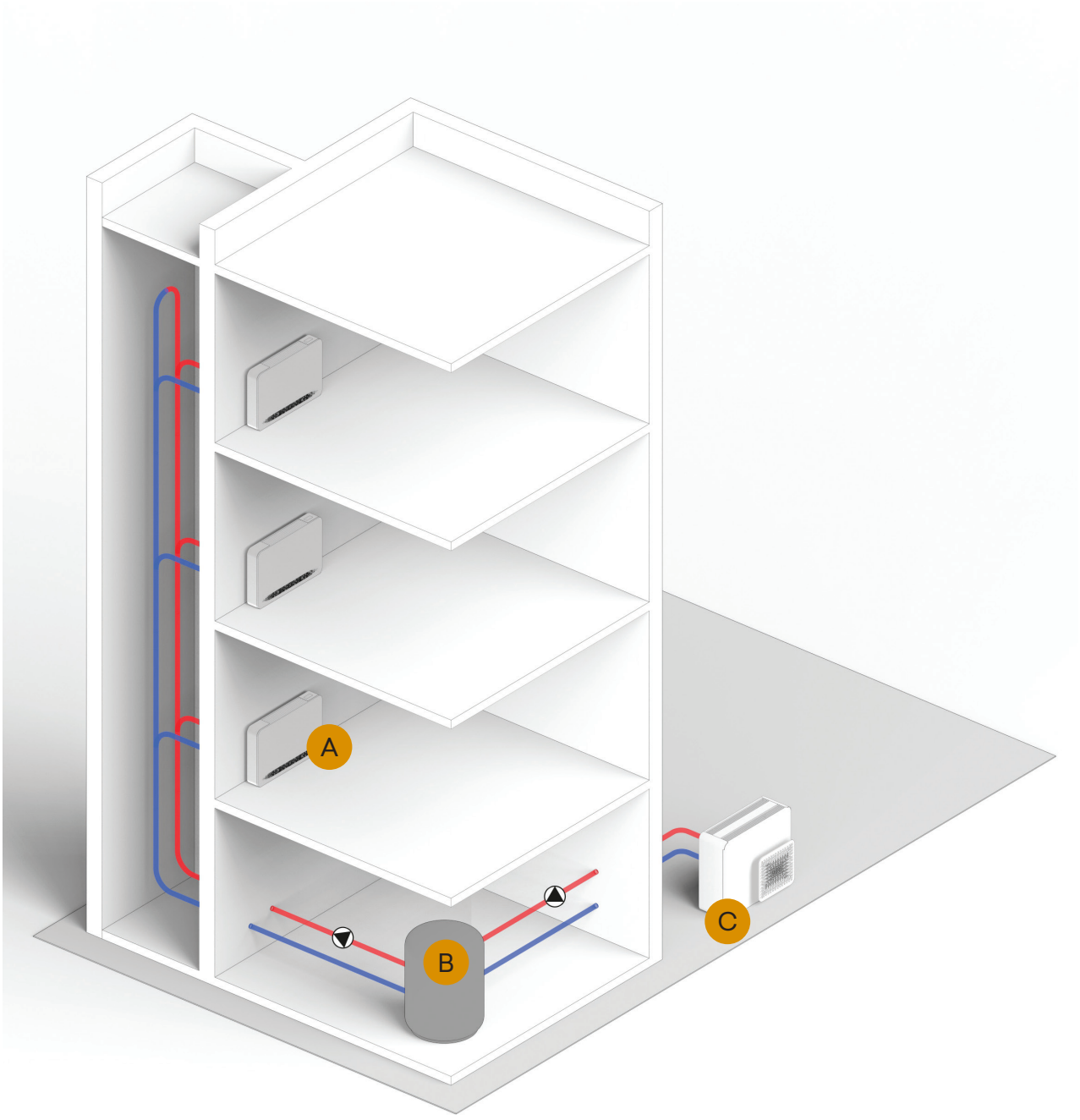
...and more...

- **Cooling operation.**
  Condensate is disposed of through a high-pressure injection system that reinjects condensate produced in the summer period into the existing system. Through a pressure switch, the pressure level of the system is monitored by discharging the excess into the technical room.
- **Remote control via APP.**
  With the "InnovApp" App, it is possible to control the unit remotely, manage multiple devices, set a different operation mode for each device, and make daily/weekly programming.
- **Flow management and cleaning.**
  Both on/off and modulating 2/3-way valve with mechanical and magnetic filter for protection of plate heat exchanger (and provision for check valve for injection of condensate into system).
- **Energy metering.**
  Using a flowmeter with vortex technology and temperature sensors, the energy withdrawn or transferred to the loop can be monitored for proper allocation of consumption.

Solutions for thermal balancing of the water loop

The WLHP module network must operate with a balanced and stable temperature water loop in order to maximize the overall efficiency of the system while minimizing operating costs.
There are several solutions that enable this balancing:

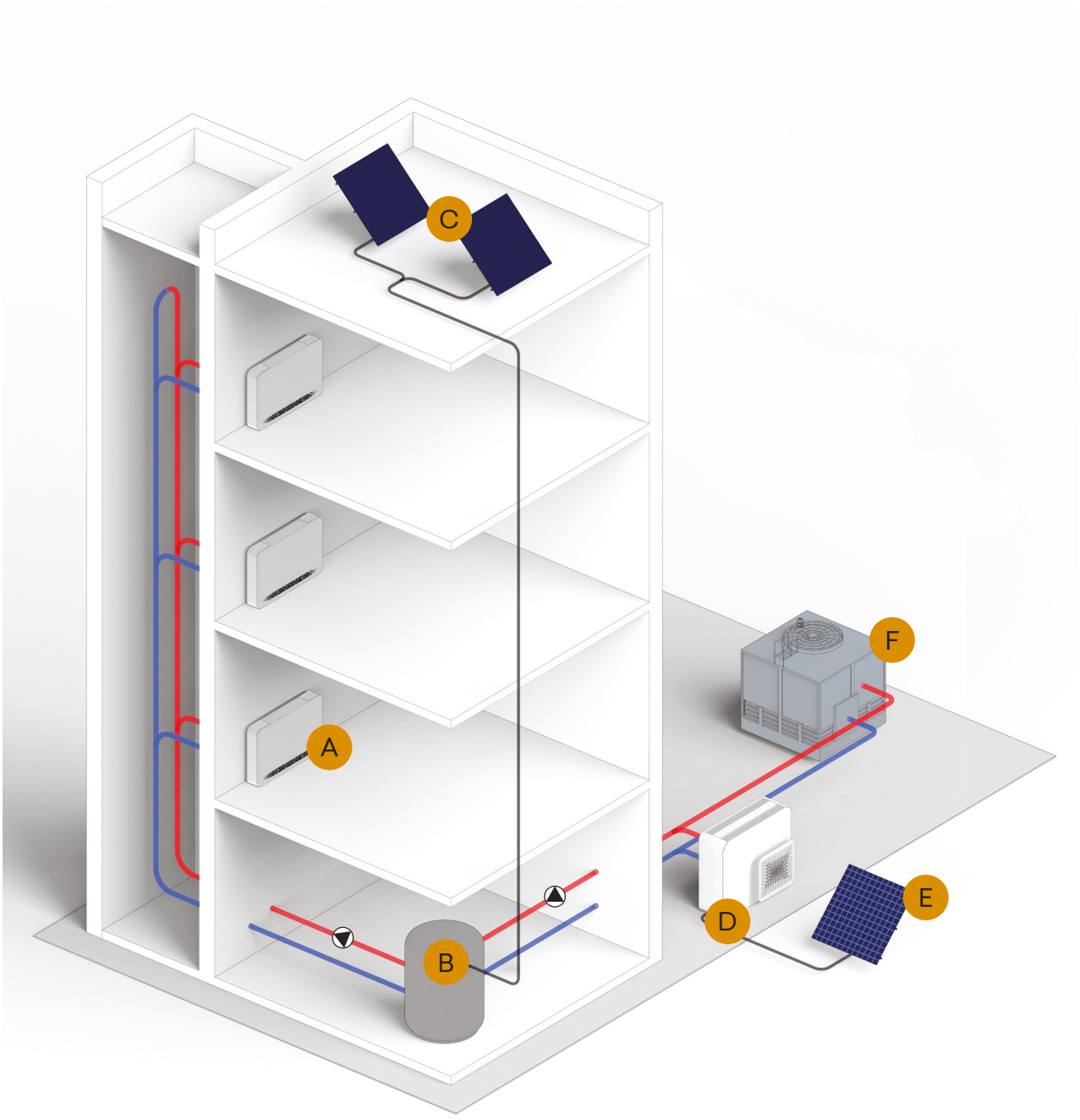
Thermal balancing of the loop with air/water heat pump



The air-source heat pump draws energy from the outside air to balance the loop. The temperature of the loop is at a temperature condition that allows very high seasonal efficiency to the air-to-water heat pump.

A. Terminal in PdC WLHP (second stage)
B. Inertial
C. Heat pump (first stage)

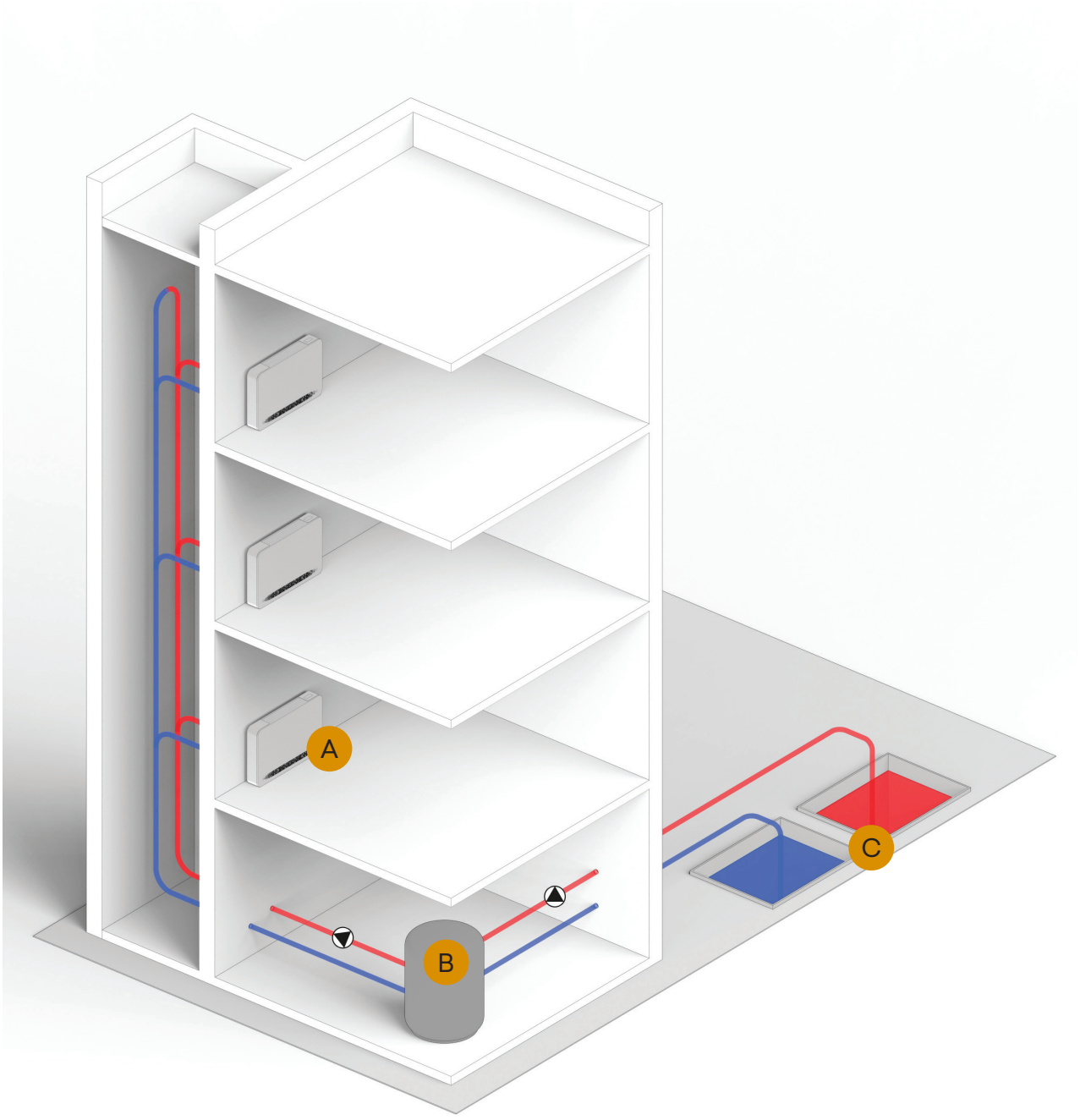
Mixed system thermal ring balancing



Solar thermal panels for heating the ring water in winter phase, evaporative tower for cooling the ring water in summer phase, photovoltaic panels to support the heat pump.

A. Terminal in PdC WLHP (second stage)
B. Inertial
C. Solar thermal
D. Heat pump (first stage)
E. Solar photovoltaic
F. Evaporative tower

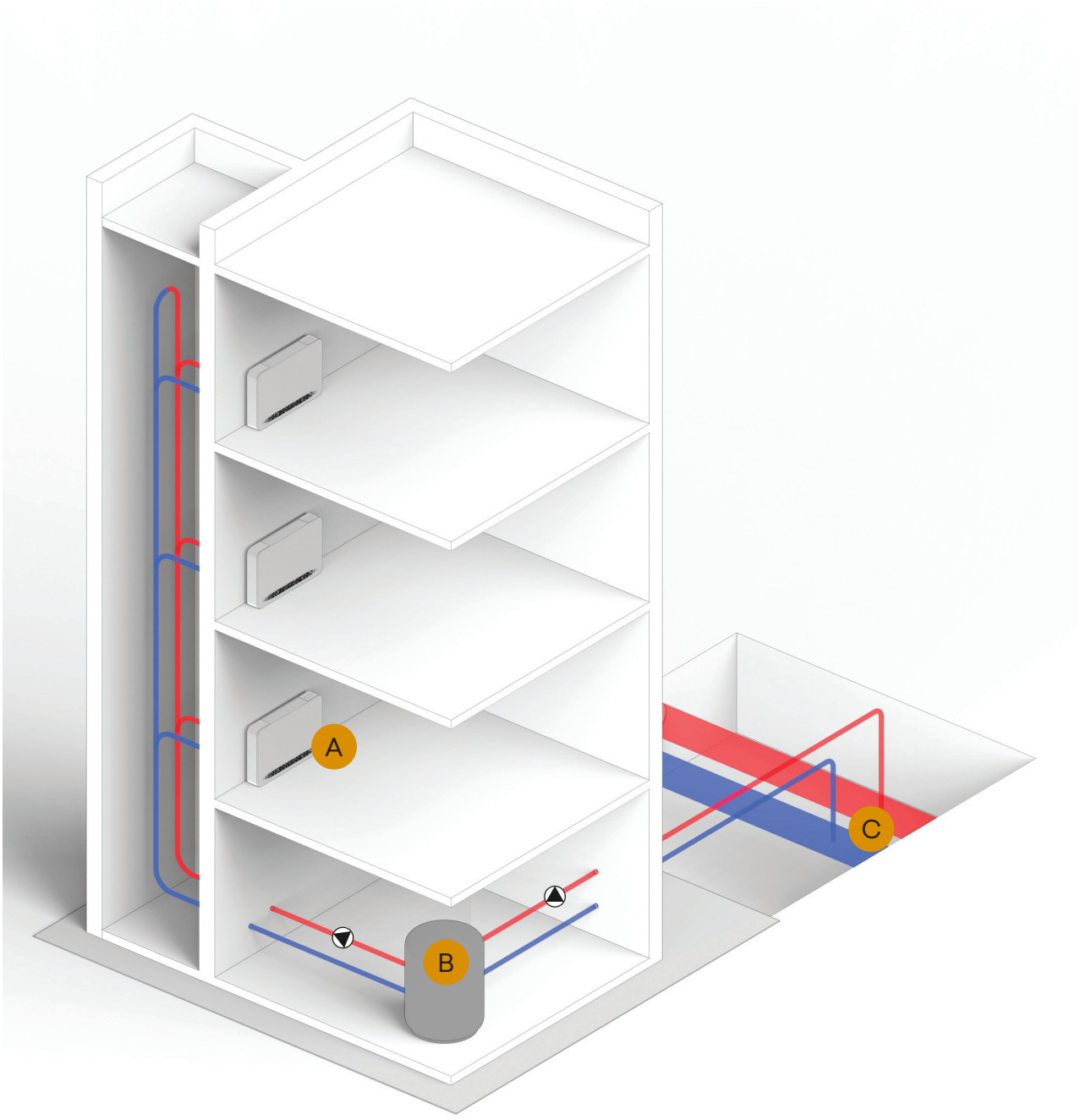
Thermal balancing of the loop
With groundwater or geothermal probes



Groundwater, and even better geothermal probes, are very favorable temperature thermal sources that remain constant throughout the year. They allow thermal balancing of the plant loop in both winter and summer phases using 100% renewable energy.

A. Terminal in PdC WLHP (second stage)
B. Inertial
C. Groundwater

Thermal balancing of the loop
With low-temperature district heating network



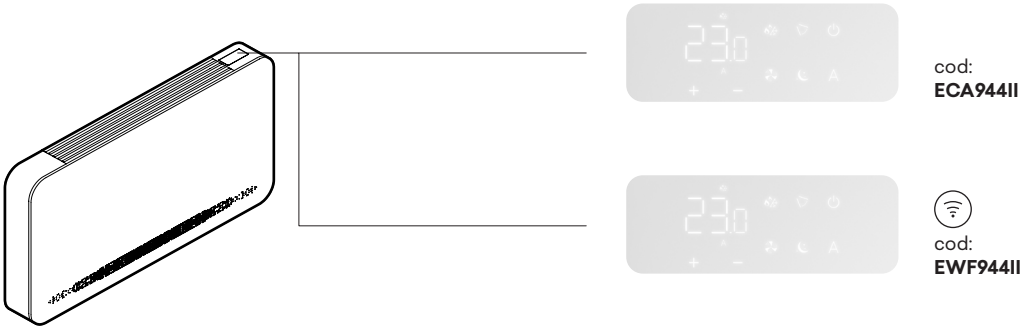
"Cold" district heating
The advantages in using low-temperature district heating networks are related to the possibility of being able to transfer to the network not only industrial waste heat, but also heat from various local businesses such as supermarkets or offices, which can dispose of heat without additional costs or even sell it.

A. Terminal in PdC WLHP (second stage)
B. Inertial
C. "Cold" district heating network

Commands

M7 SERIES

On-board control
Mandatory



M7 SERIES

Cod:
ECA944II

- PI Logic
- Touch interface
- Modulating speed
- RS485 modbus port for BUTLER or BMS connection

Cod:
EWF944II

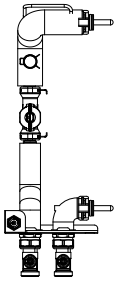
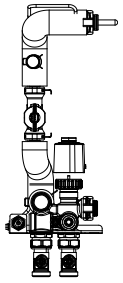
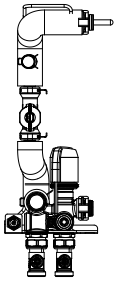
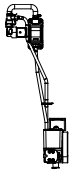
- PI Logic
- Touch interface
- Modulating speed
- WIFI connection

Wall control
To be added to the on-board control

Cod:
EEB749II

Electronic LED control panel with touch interface, wall installation complete with thermostat and room temperature and relative humidity probe. Cable connection. White color

Gruppi idraulici e raccordi

	**AI0142II**	WLHP 200 WLHP 400	Basic hydronic kit (*)
	AI0146II	WLHP 600	Basic hydronic kit (*)
	**V20140II**	WLHP 200 WLHP 400	2/3 way on/off valve kit(*)
	V20144II	WLHP 600	2/3 way on/off valve kit (*)
	**V20141II**	WLHP 200 WLHP 400	2/3 way modulating valve kit(*)
	V20145II	WLHP 600	2/3 way modulating valve kit (*)
	**AI0143II**	ALL	Injection pump kit (*)

(*) Factory installed and tested accessory

Technical data sheets

MODEL		WLHP		
		200	400	600
Cooling performances (W 30°C; A 27 °C)				
Maximum cooling capacity (1)	kW	1,20	1,70	3,00
Rated cooling capacity (1)	kW	1,10	1,50	2,60
Minimum cooling capacity (1)	L/h	0,20	0,30	0,60
Rated power consumption (1)	kPa	0,2	0,3	0,5
EER		4,40	4,80	4,80
SEER		5,50	6,10	7,90
Heating performances (W 20 °C; A 20 °C)				
Maximum heat output (2)	kW	1,40	2,30	3,60
Rated heat output (2)	kW	1,10	2,00	3,10
Minimum heat output (2)	kW	0,40	0,40	0,80
Rated power consumption (2)	kW	0,2	0,4	0,5
COP		5,20	5,40	5,90
SCOP		6,44	6,92	6,74
Aeraulic data				
Ventilation speed	Nr.	4 (+ superminima silent)	4 (+ superminima silent)	4 (+ superminima silent)
Maximum air flow rate	m^3/h	160	330	500
Average air flow rate	m^3/h	105	205	305
Minimum air flow rate	m^3/h	50	100	175
Nominal air flow rate	m^3/h	145	295	440
Electrical data				
Voltage	V/ph/Hz		230/1/50	
Maximum power consumption	kW	0,40	0,89	1,15
Maximum absorbed current	A	1,74	3,87	5,01
Sound data				
Maximum sound pressure (3)	dB(A)	40	42	44
Rated sound pressure (3)	dB(A)	33	34	35
Minimum sound pressure (3)	dB(A)	28	29	31
Maximum sound power (4)	dB(A)	48	50	52
General features				
Compressor type		Rotary DC Inverter	Rotary DC Inverter	Rotary DC Inverter

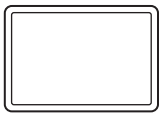
MODEL		WLHP		
		200	400	600
Hydraulic data				
Hydraulic connections	" EK		3/4	
Rated flow rate in heating	L / min	3,7	7,7	12,0
Rated flow rate in cooling	L / min	4,5	5,2	9,0
Nominal pressure drop in heating	kPa	6,80	11,20	12,50
Nominal pressure drop in heating with flow control valve	kPa	7,80	14,20	20,50
Nominal pressure drop in cooling	kPa	4,80	5,40	7,50
Nominal pressure drop in cooling with flow control valve	kPa	5,40	6,70	11,80
Refrigerant gas data				
Refrigerant type		R290	R290	R290
Refrigerant quantity	Kg	0,10	0,14	0,15
Product dimensions and weights				
Total Width	mm	775	975	1225
Total Height	mm	641	641	641
Total depth	mm	144	144	144
Empty weight	Kg	35,0	40,0	45,0
Operating limits				
Heating - indoor air min/max	°C	5/27	5/27	5/27
Heating - water min/max	°C	10/45	10/45	10/45
Cooling - indoor air min/max	°C	18/35	18/35	18/35
Cooling - water min/max	°C	15/50	15/50	15/50

1	Loop water temperature 30 °C - Ambient air temperature 27 °C, indoor humidity 38 % - Performance according to EN 14511
2	Ring water temperature 20 °C - Ambient air temperature 20 °C, indoor humidity 50 % - Performance according to EN 14511
3	Sound pressure at a distance of 1 m measured according to ISO 7779
4	Sound power measured according to EN 16583

BUTLER PRO

BUTLER PRO TOUCH
with built-in display

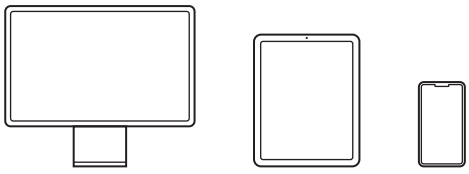
Display



BUTLER PRO
by WEB

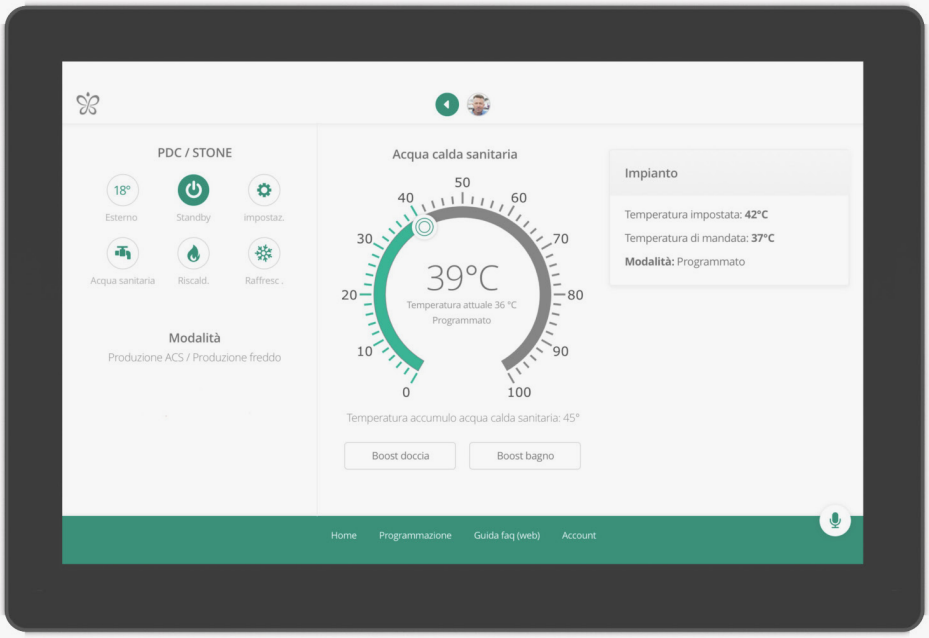
Local PC

Tablet e Mobile



Il controllo evoluto dell'impianto

The BUTLER PRO O web server is the system that INNOVA has developed to control an entire winter and summer air conditioning system from a local and remote network.
BUTLER PRO allows you to connect the heat pump, controlled mechanical ventilation system, fan coils and all the other system elements via a serial connection.
BUTLER PRO is complete, simple and intuitive at the same time: you can configure a weekly calendar with time zones, create specific zones and change the settings so your home is at the right comfort level for your needs.


PDC / STONE
18°
Esterno
Standby
impostaz.
Acqua sanitaria
Riscald.
Raffresc.
Modalità
Produzione ACS / Produzione freddo
Acqua calda sanitaria
39°C
Temperatura attuale 36 °C
Programmato
Temperatura accumulo acqua calda sanitaria: 45°
Boost doccia
Boost bagno
Impianto
Temperatura impostata: 42°C
Temperatura di mandata: 37°C
Modalità: Programmato
Home
Programmazione
Guida faq (web)
Account


Programmazione
Calendario predefinito
Impostaz.
Calendari
Legenda: Comfort Notte Economico Antigelo Assente
Lunedì Modifica
Martedì Modifica
Mercoledì Modifica
Giovedì Modifica
Venerdì Modifica
Sabato Modifica
Domenica Modifica


PDC / STONE
18°
Esterno
Standby
impostaz.
Acqua sanitaria
Riscald.
Raffresc.
Modalità
Produzione ACS / Produzione freddo
Acqua calda sanitaria
39°C
Temperatura attuale 36 °C
Programmato
Temperatura accumulo acqua calda sanitaria: 45°

Supervision and control through local network or remotely
The system can be managed through a smartphone, tablet or computer

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Summer and winter personalised programming
Different programmes can be set for each season

Setting of three temperature levels on the INNOVA fan coil network
For each room or zone it is possible to select 3 different work temperatures, which can be modified at any time

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Weekly time programming
In each room it is possible to set different operating times

Etwork interface like the one on PCs Once the bus network between the heat pump and the fan coils has been made,
the connection with the Web server is the same as that of a normal computer

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Remote assistance
With the user's consent, BUTLER can automatically access the INNOVA cloud for diagnostics and assistance in case of need

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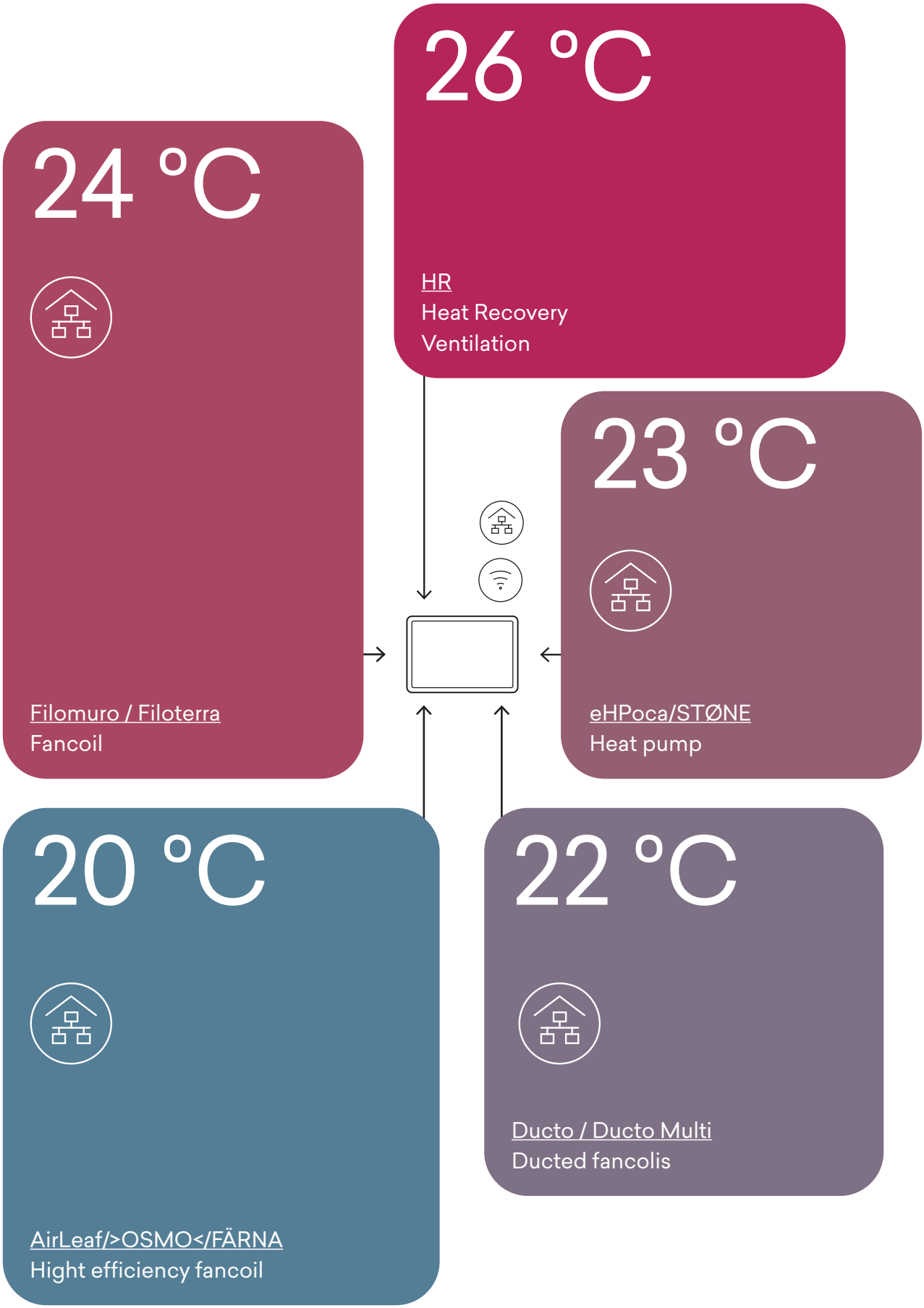
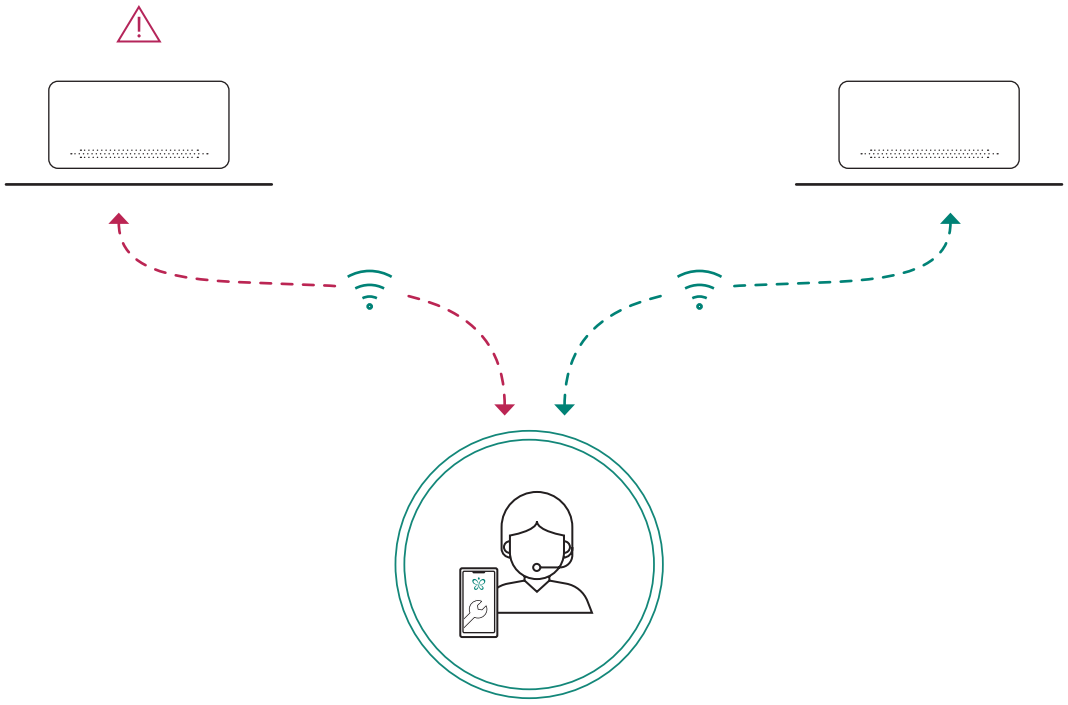
Control by room

Room-by-room control with BUTLER you can set a weekly time-based calendar, create scenarios for each room or by zones, change settings so that your home is at the right comfort level at the time you need it


26 °C
HR
Heat Recovery
Ventilation
24 °C
Filomuro / Filoterra
Fancoil
23 °C
eHPoca/STØNE
Heat pump
20 °C
AirLeaf/>OSMO</FÄRNA
Hight efficiency fancoil
22 °C
Ducto / Ducto Multi
Ducted fancolis

Web Server
BUTLER PRO



Remote assistance

With the user's consent BUTLER PRO, O can automatically access the INNOVA cloud for diagnostics and assistance in case of need. Thanks to the Internet connection, it is possible to verify remotely the correct operation of INNOVA products connected to the BUTLER PRO. Any operating anomalies can be transmitted automatically from the BUTLER PRO O to the assistance centre which can in-tervene by modifying the functional parameters or decide to physically intervene by providing a quick and timely service.

Total control

The advantage of choosing a complete INNOVA system is that, for any need, we are the only reference both for routine maintenance and for assistance purposes. A complete and high quality service.

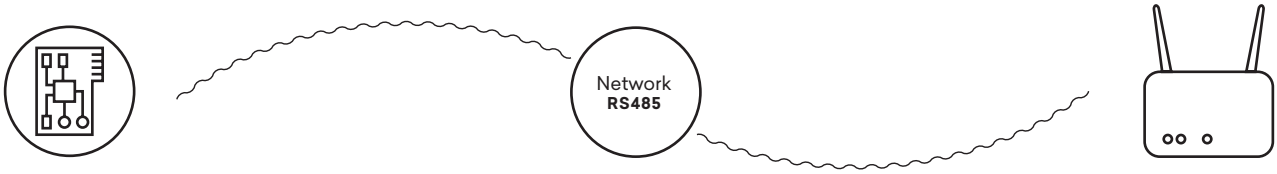
Network commands For remote control and fancoils network management

Web Server BUTLER.

ECA944II - EEB749II

BUTLER PRO

Kit Web Server BUTLER PRO for local and remote control of fancoil networks.

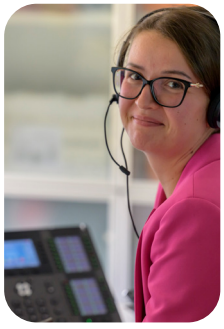
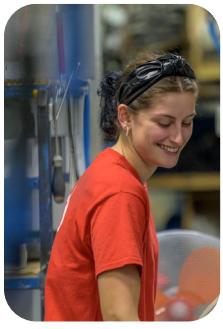










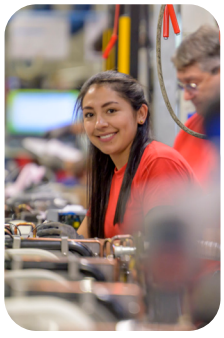











Ideas, products, people.

innova

ehpa european heat pump association

Heat Pump Award 2023

INNOVA vince il 1° premio nella categoria Decarbuilding con "WLHP - Water Loop Heat Pump"

CREDITS

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