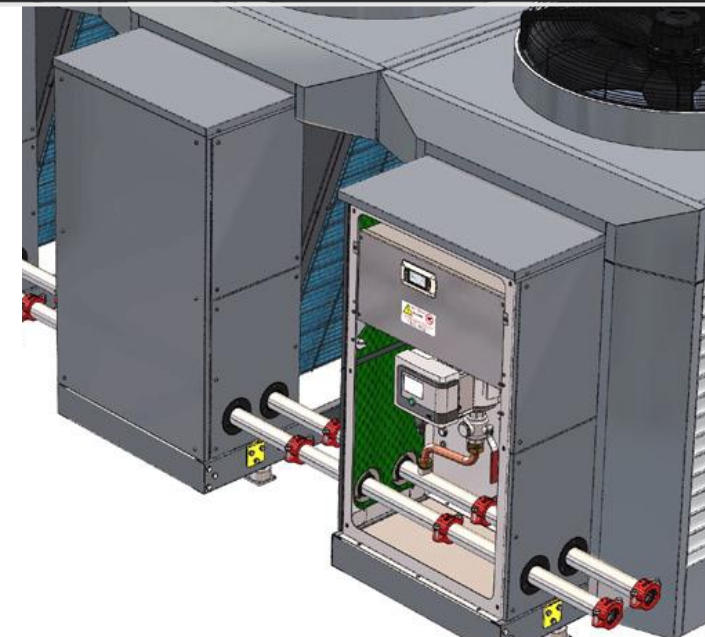
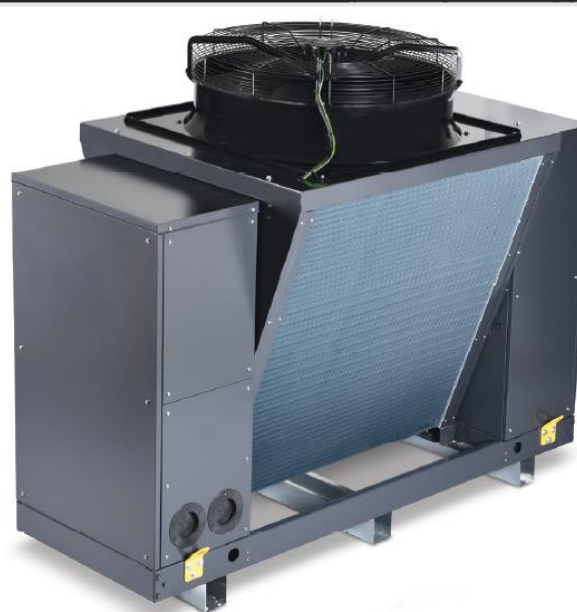
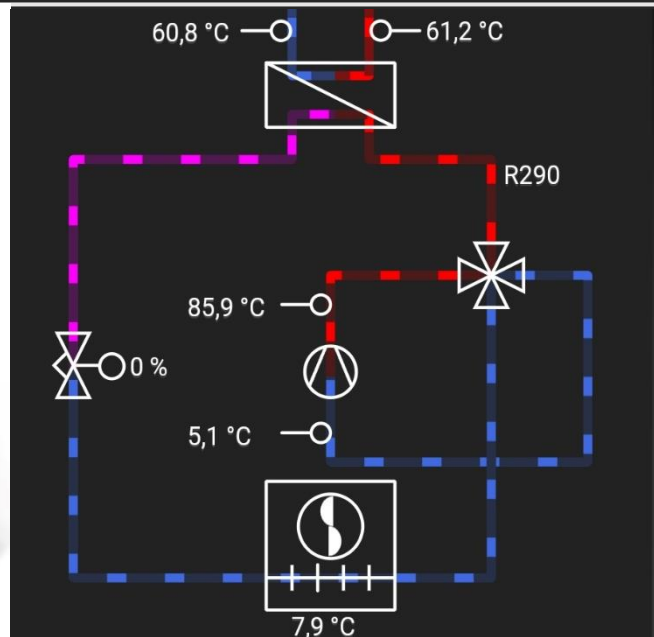


R290 Product Launch - 2026

Barry Piorkowski, PhD CEng MIMechE.





Product Datasheet

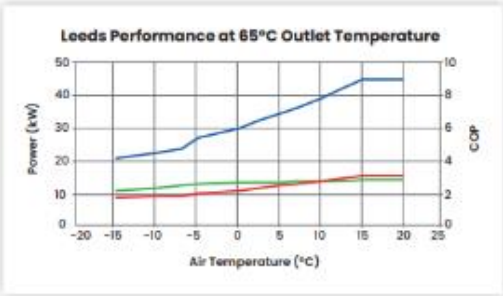
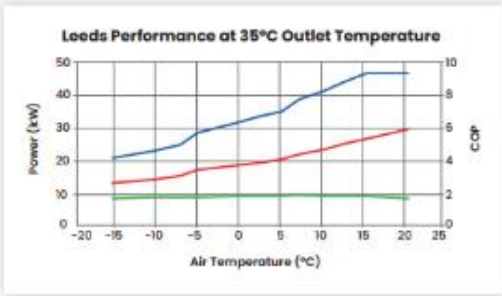
Leeds Air to Water Heat Pump

Product Name	Leeds Single	
Product Number	GE40501-001-00	
Refrigerant Amount (kg)	R290	6.0
Electrical Booster Heater (External)	9kW	Optional
Heat Pump Space Heater @ 55°C	EHP Rating	A++
	SSHEE* ¹ (%)	126%
	SCOP	3.22
Heat Pump Space Heater @ 35°C	EHP Rating	A++
	SSHEE* ¹ (%)	151%
	SCOP	3.85
Heating (Air 3°C/ Water 30°C)	Rated Output (kW)	26.5
	Power Consumption (kW)	8.0
	COP	3.3
Cooling (Air 35°C/ Water 18°C)	Rated Output (kW)	35.7
	EER	3.29
Min/ Max Outlet Temperature (°C)	7 to 70	
Mass (kg)	500	
Heat Pump Voltage / Frequency	400V 3ph+N+PE AC / 50Hz	
Max Running Current (A) Compressor	32	
Max Electrical Power (kW) Compressor	21	
Sound Pressure Level @ 10m (dBa) * ^{2,3}	40	
Operating Ambient Temperature (°C)	-25 to +45	
Max Starting Current (A) with / without Soft Starter	95 / 140	
Water Connections (inch)	2	

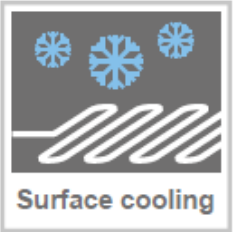
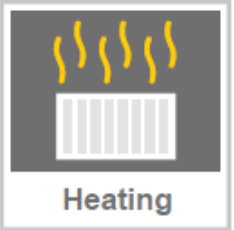
*1 - VDE tested, A7/W55, with fully spherical spread
*2 - Seasonal Space Heating Energy Efficiency
*3 - Sound power level in dB(A) as tested to BS EN 12102



Dimensions (mm)
W: 1400 H: 1770 D: 2280



Power Output (kW) Power Input (kW) COP



Cascade circuit made simple with pre-fabricated Victualic connections.

Booster heater 9kW per compressor, including emergency heating function 400V.

Up to 70°C flow temperatures means heating is comparable to legacy boilers but more efficient.

BS EN 12831-1:2017



BSI Standards Publication

Energy performance of buildings - Method for calculation of the design heat load

Part 1: Space heating load, Module M3-3

BRITISH STANDARD

Eurocode 1 — Actions on structures

Part 1-6: General actions —
Actions during execution

BS EN
1991-1-6:2005
*Incorporating
corrigenda
July 2008,
November 2012
and February 2013*



Technical expert Plan derives from, approx. 2hrs on site face-to-face with follow ups from the team in the office on the phone / email.

Deliverable outputs, approximately ten working days after the visit are itemised below.

- Requirements analysis for heat pump operating mode (Monovalent / Monoenergetic / Bivalent parallel / Bivalent alternative)
- Basic indicative assessment of the building heating requirements (kW duty required for sizing a heat pump system)
- Review of existing heating / hot water plant, distribution system (buffer, DHW, pipe sizes, emitters)
- Budget estimate of heat pump + accessories (supply only, excludes installation)
- Written Proposal to formulate a Project Plan with example ROI

Specify @ £8,000



Global Energy
Systems

ONLINE VERSION



The Building Regulations 2010

Conservation of
fuel and power

APPROVED DOCUMENT



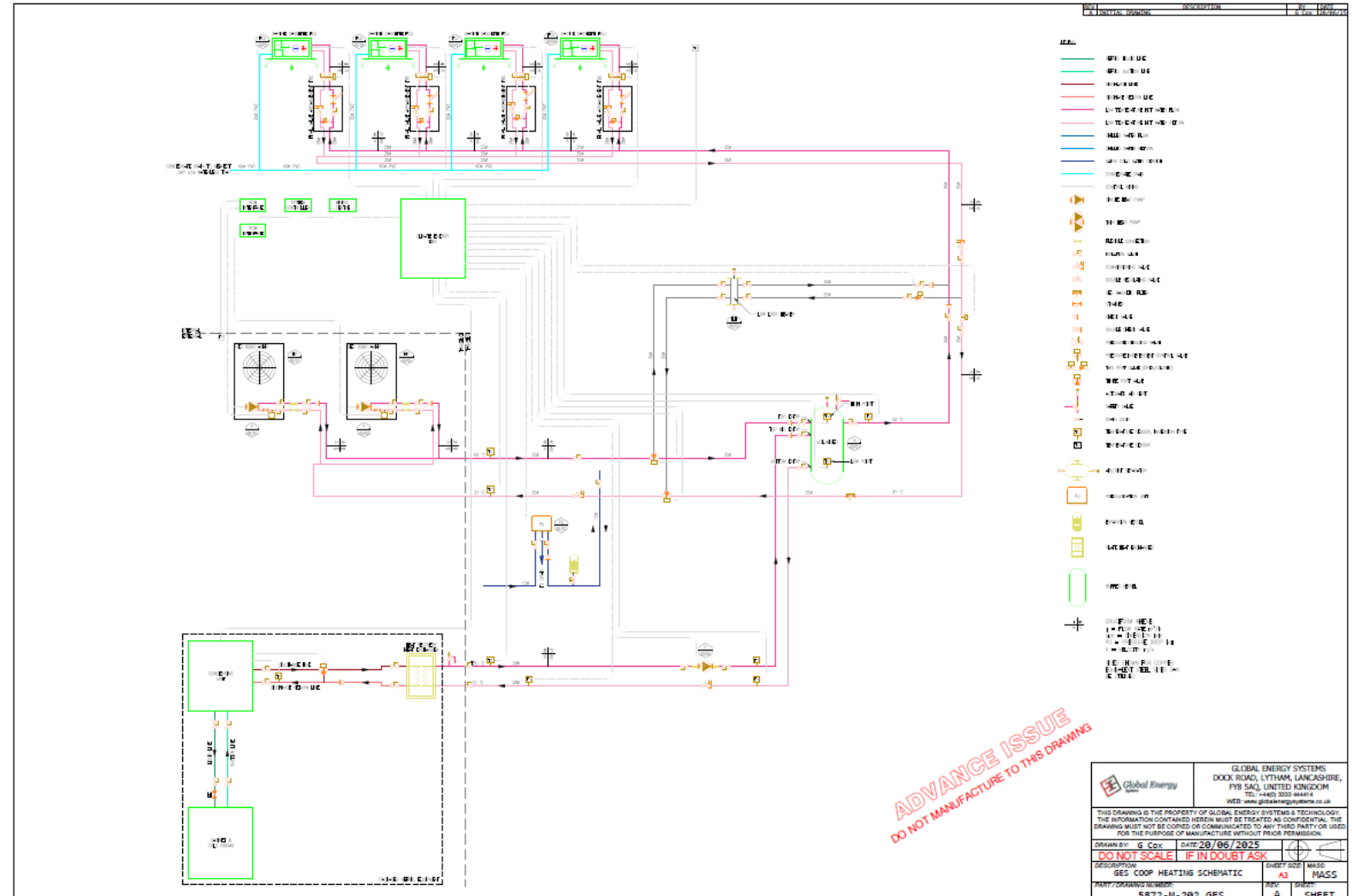
Volume 2: Buildings other than dwellings

Requirement L1: Conservation of fuel and power

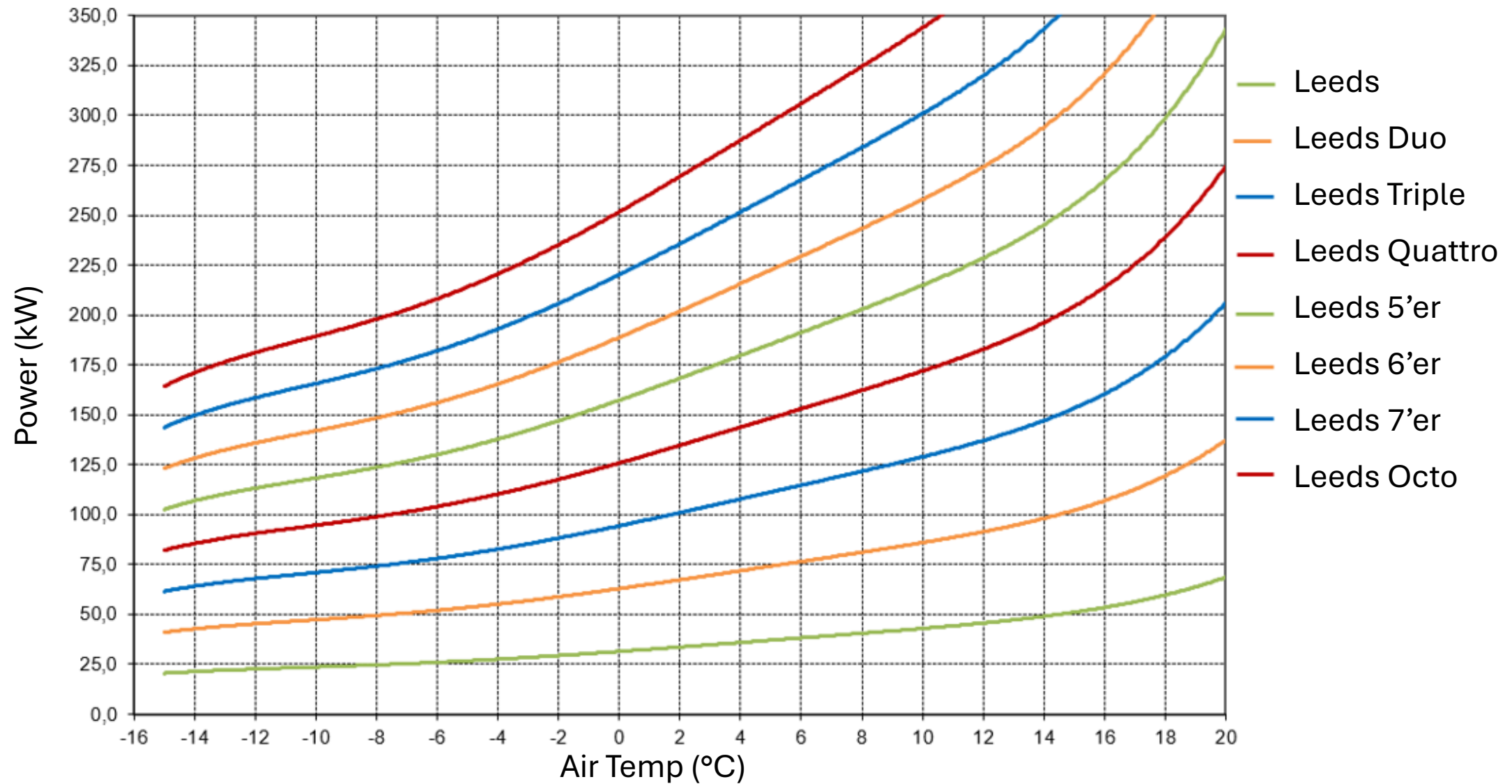
Requirement L2: On-site generation of electricity

Regulations: 6, 22, 23, 24, 25, 25A, 25B, 26, 26C, 27, 27C,
28, 40, 40A, 43, 44 and 44ZA

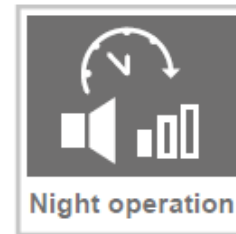
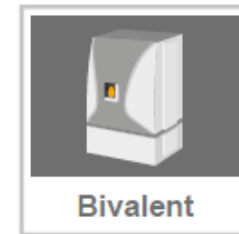
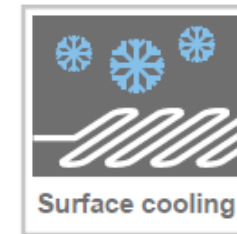
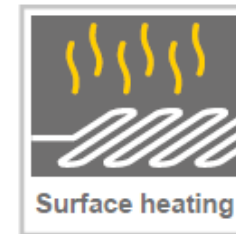
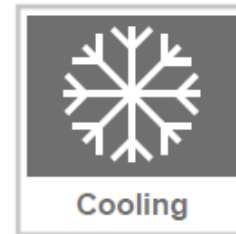
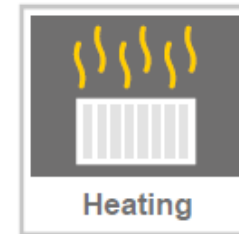
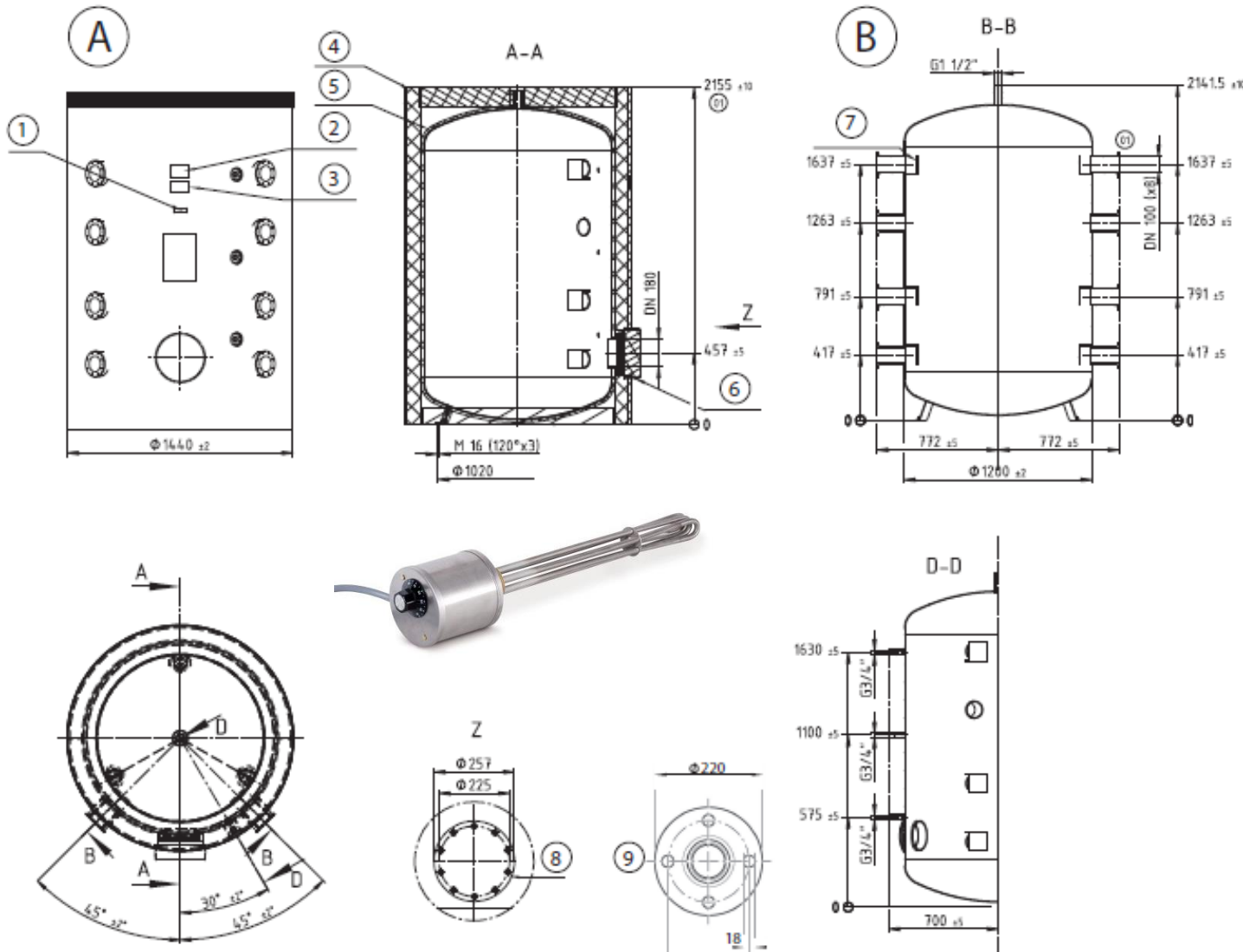
2021 edition incorporating 2023 amendments –
for use in England



Leeds Cascade W35



Buffer 2000 litre



Cascade made simple with pre-sized flanged connections.

Booster heater (optional) 6kW per Buffer.

Optimized for Leeds in heating, cooling and bi-valent modes



Product Datasheet

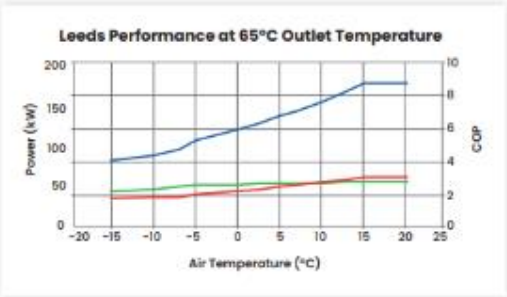
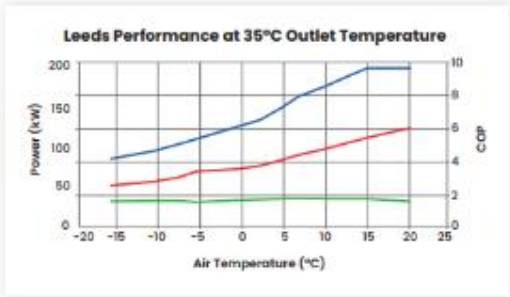
Leeds Quattro Air to Water Heat Pump

Product Name		Leeds Quattro
Product Number		GE40501-004-00
Refrigerant Amount (kg)	R290	4 x 4.0
Electrical Booster Heater (External)	4 x 9kW	Optional
Heat Pump Space Heater @ 55°C	ErP Rating	A++
	SEHSE ^{*2} (%)	120%
	SCOP	3.22
Heat Pump Space Heater @ 35°C	ErP Rating	A++
	SEHSE ^{*2} (%)	151%
	SCOP	3.25
Heating (Air -3°C/ Water 35°C)	Rated Output (kW)	106.0
	Power Consumption (kW)	32.1
	COP	3.3
Cooling (Air 35°C/ Water 18°C)	Rated Output (kW)	142.0
	EER	3.29
Min/Max Outlet Temperature (°C)	7 to 70	
Mass (kg)	2490	
Heat Pump Voltage / Frequency	400V 3ph+N+PE AC / 50Hz	
Max Running Current (A) Compressor	32	
Max Electrical Power (kW) Compressor	21	
Sound Pressure Level @ 10m (dB(A)) ^{*3}	60	
Operating Ambient Temperature (°C)	-25 to +45	
Max Starting Current (A) with / without Soft Starter	95 / 140	
Water Connections (Inch)	3	

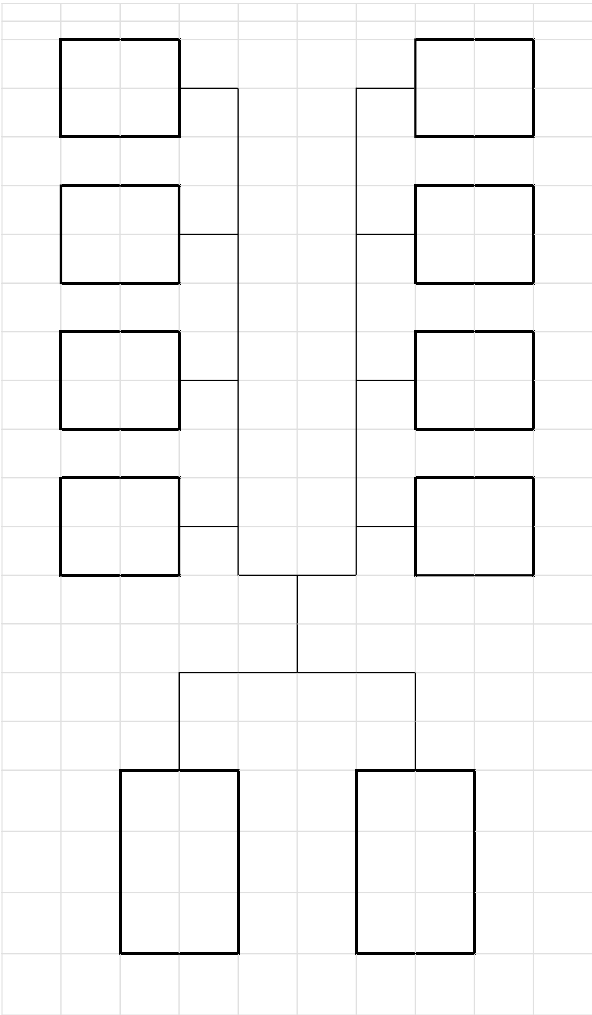
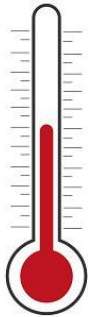
^{*1} - VDE tested, A7/W55, with fully spherical spread
^{*2} - Seasonal Space Heating Energy Efficiency
^{*3} - Sound power level in 68dBA as tested to BS EN 12102



Dimensions (mm)
W: 5600 H: 1770 D: 2280



— Power Output (kW) — Power Input (kW) — COP



Leeds Octo + Boosters



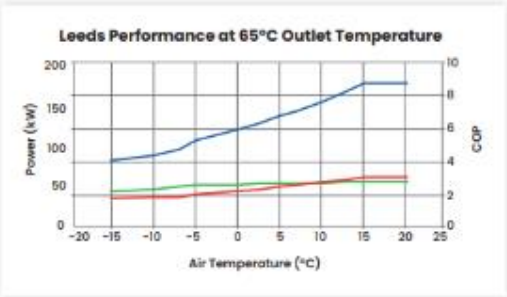
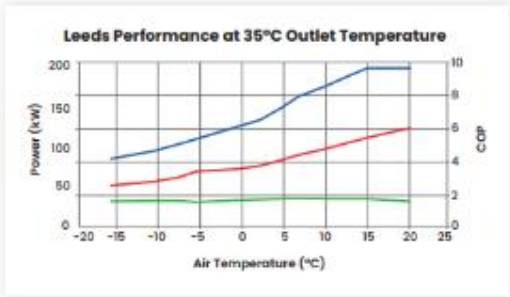
Leeds Quattro Air to Water Heat Pump

Product Name		Leeds Quattro
Product Number		GE40501-004-00
Refrigerant Amount (kg)		4 x 4.0
Electrical Booster Heater (External)		Optional
Heat Pump Space Heater @ 55°C	ErP Rating	A++
	SEHSE ¹ (%)	126%
	SCOP	3.22
Heat Pump Space Heater @ 35°C	ErP Rating	A++
	SEHSE ¹ (%)	151%
	SCOP	3.25
Heating (Air -3°C/ Water 35°C)	Rated Output (kW)	106.0
	Power Consumption (kW)	32.1
	COP	3.3
Cooling (Air 35°C/ Water 18°C)	Rated Output (kW)	142.0
	EER	3.29
Min/Max Outlet Temperature (°C)		7 to 70
Mass (kg)		2490
Heat Pump Voltage / Frequency		400V 3ph+N+PE AC / 50Hz
Max Running Current (A) Compressor		32
Max Electrical Power (kW) Compressor		21
Sound Pressure Level @ 10m (dB(A)) ²		60
Operating Ambient Temperature (°C)		-25 to +45
Max Starting Current (A) with / without Soft Starter		95 / 140
Water Connections (inch)		3

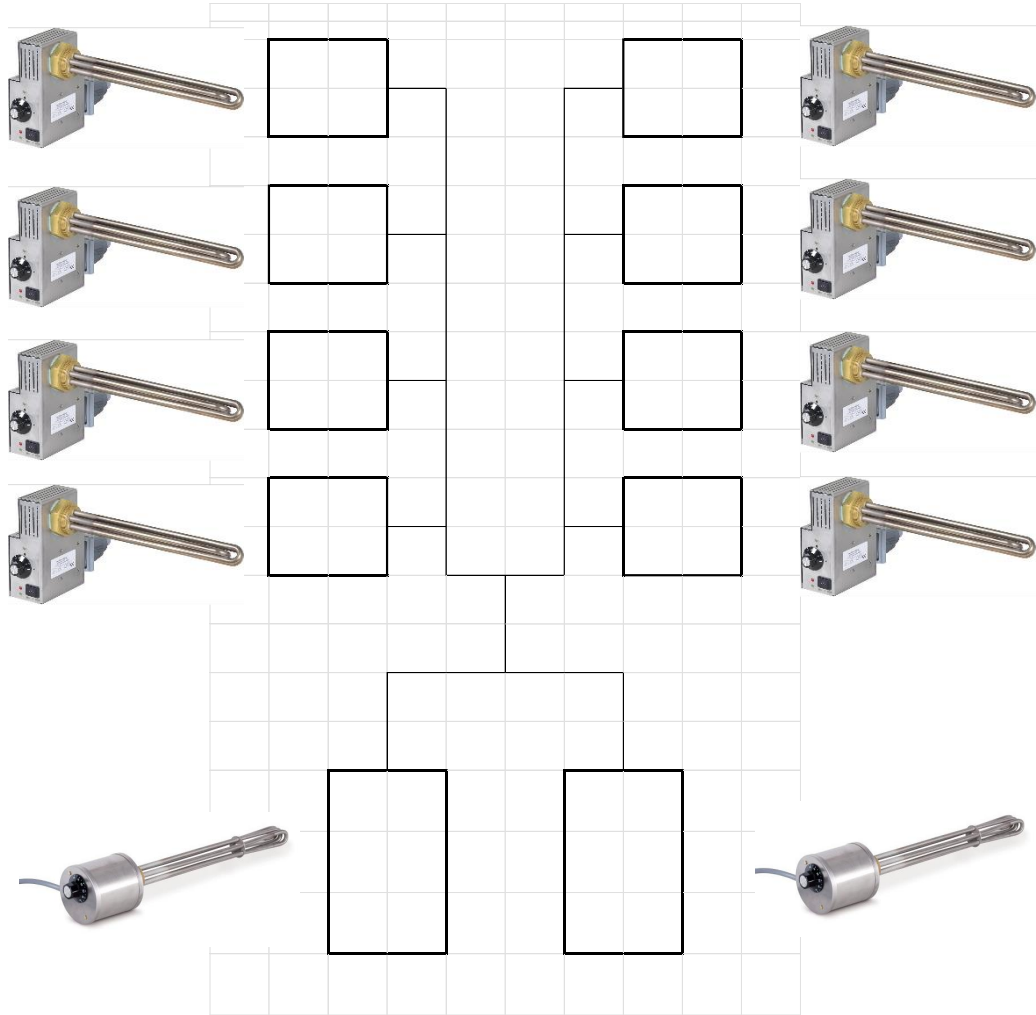
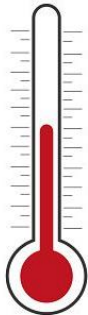


Dimensions (mm)
W: 5600 H: 1770 D: 2280

¹ - VDE tested, A7/W55, with fully spherical spread
² - Seasonal Space Heating Energy Efficiency
³ - Sound power level in 68dB(A) as tested to BS EN 12102



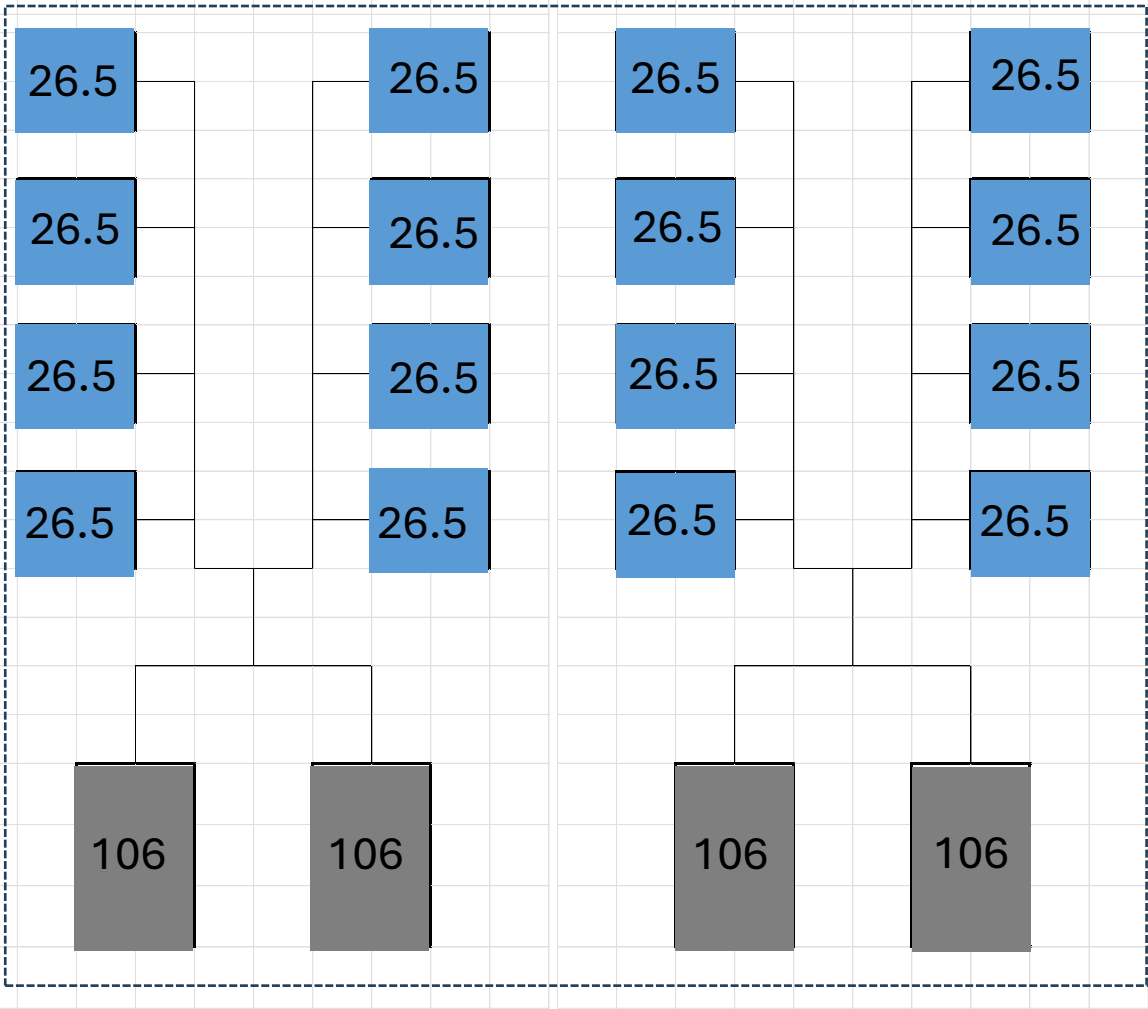
— Power Output (kW) — Power Input (kW) — COP



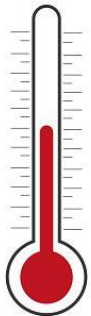
Leeds 2off 8+8



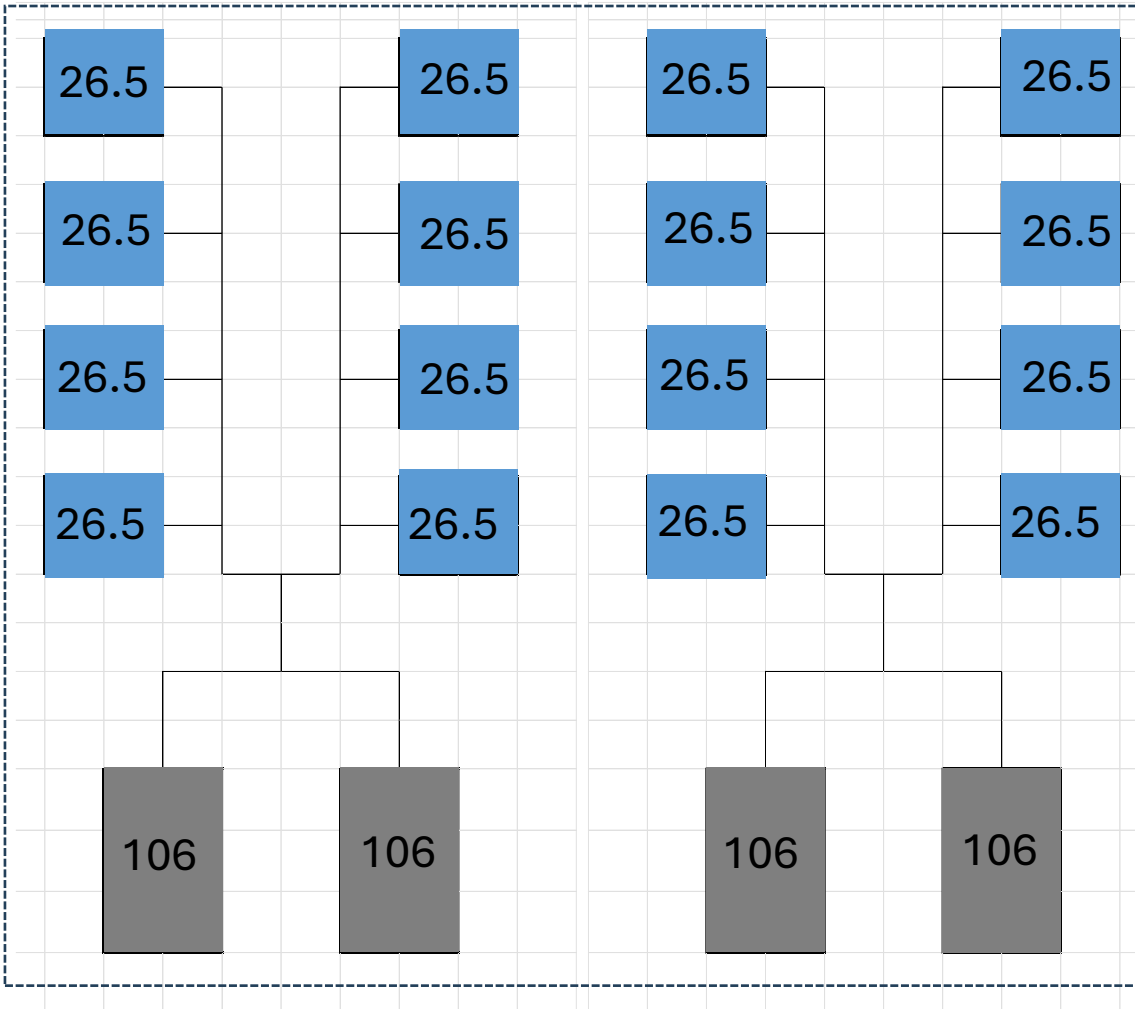
Global Energy
Systems



$4 \times 106 = 424 \text{ kW}$

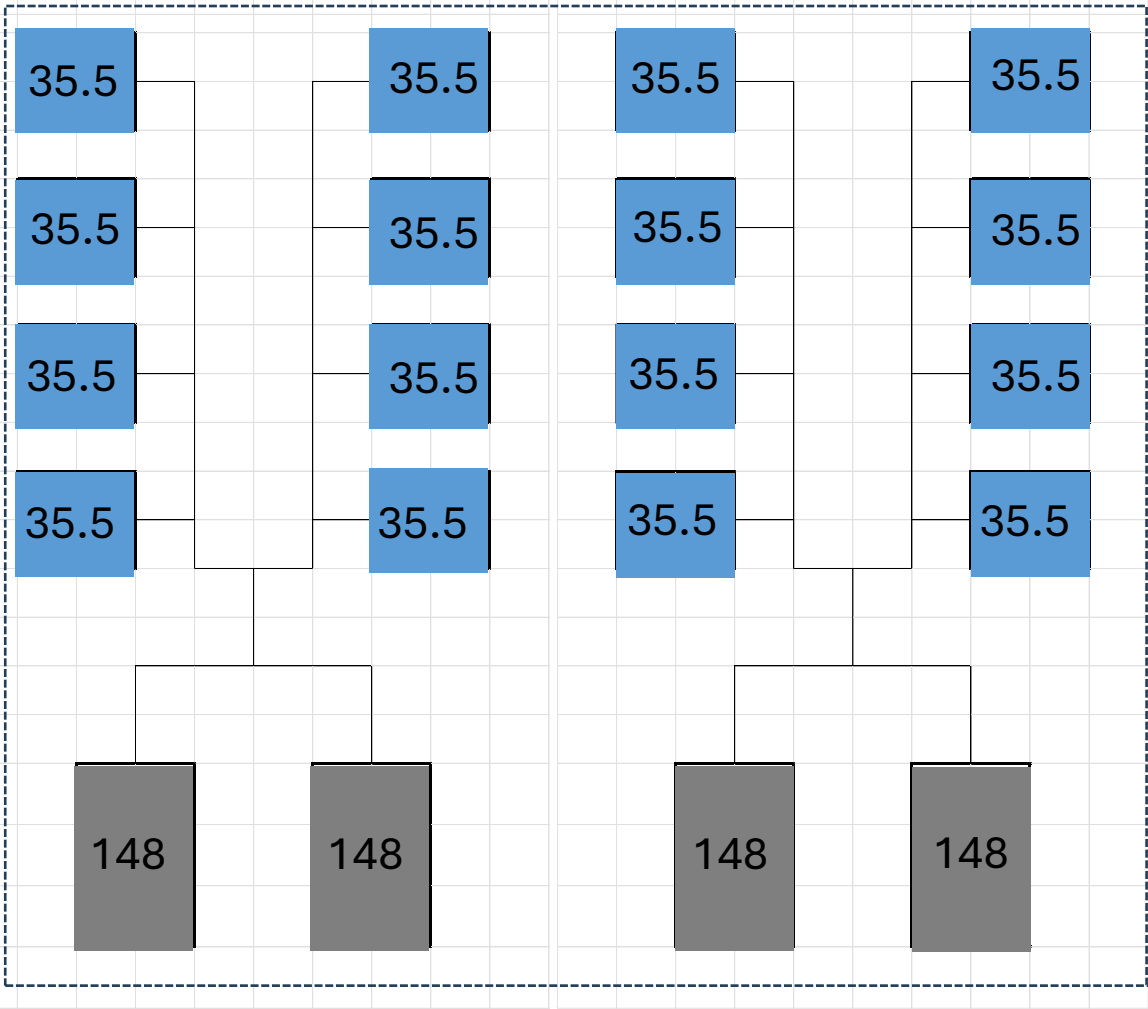


A-3

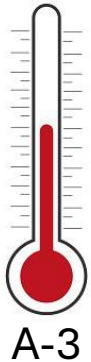


$4 \times 106 = 424 \text{ kW}$

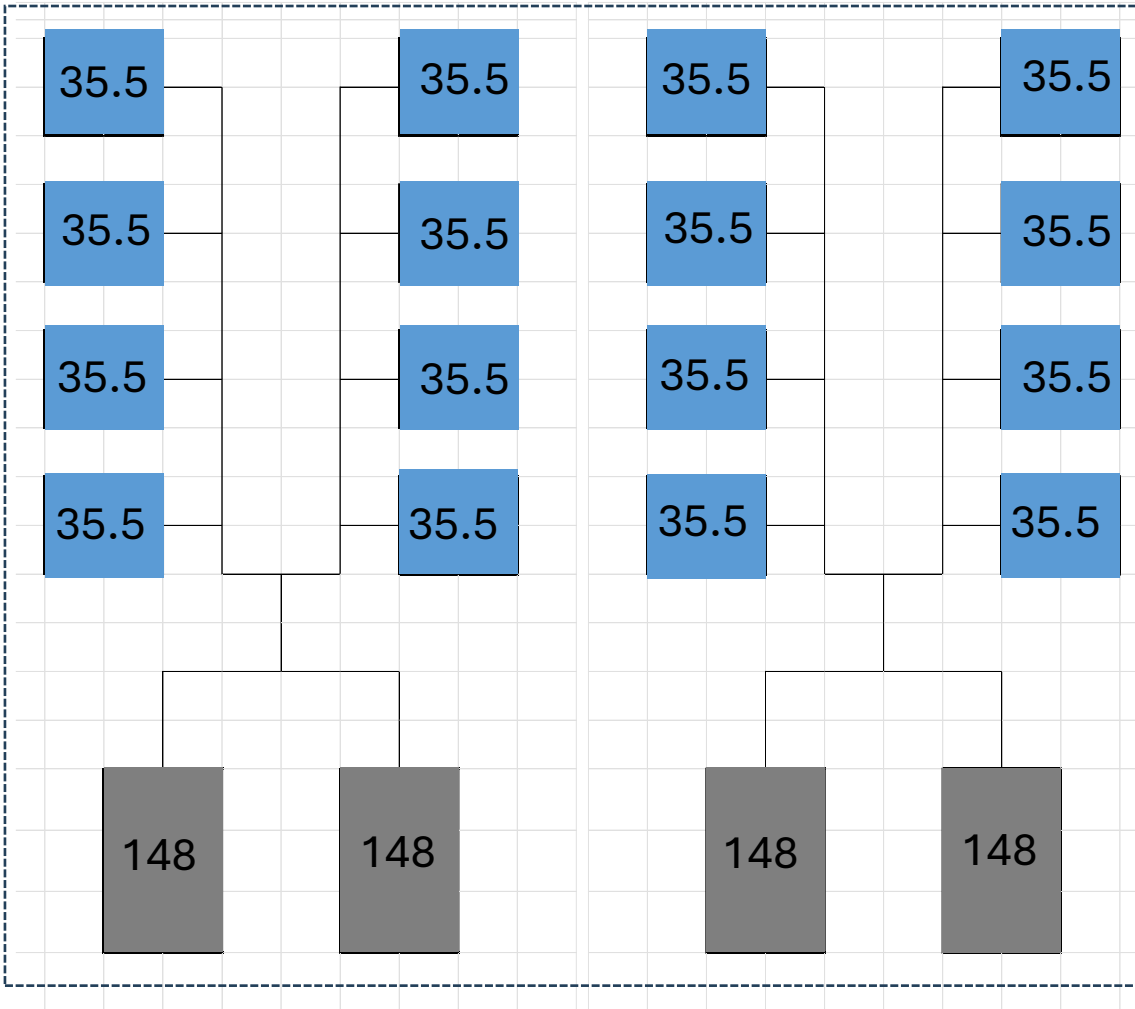
Leeds 2off 8+8 + Boosters



4 x148 = 592 kW

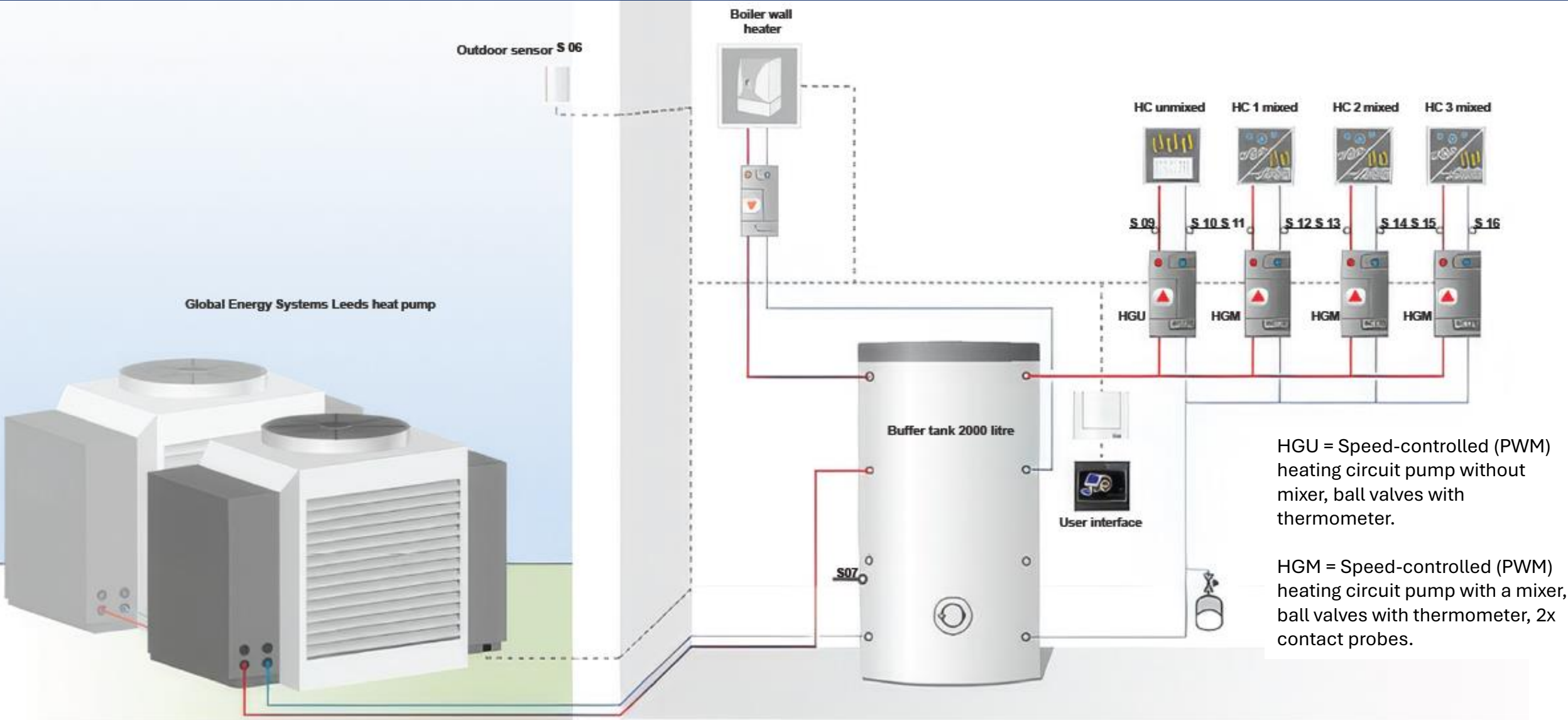


A-3



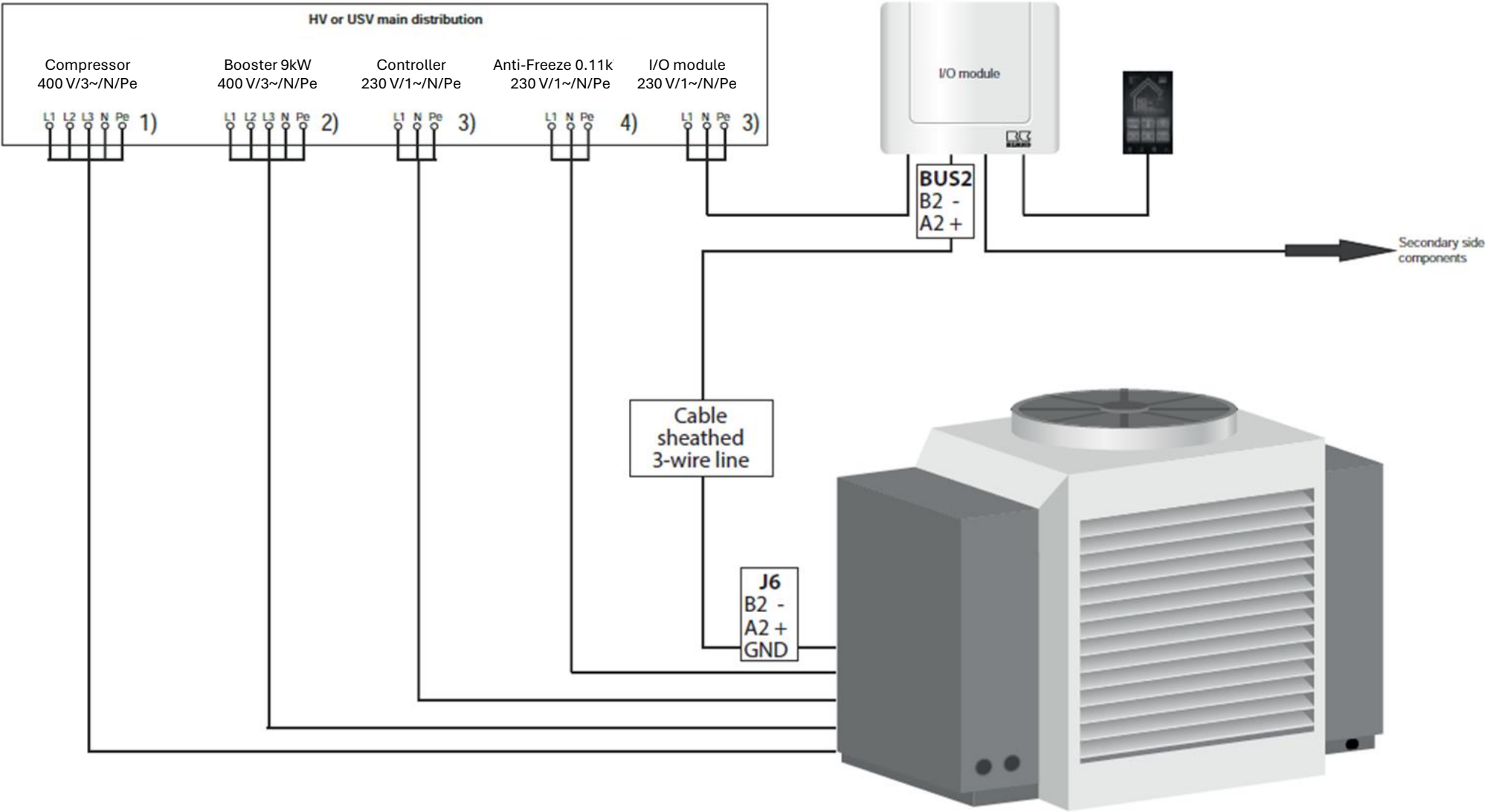
4 x148 = 592 kW

Bi-valent



HGU = Speed-controlled (PWM) heating circuit pump without mixer, ball valves with thermometer.

HGM = Speed-controlled (PWM) heating circuit pump with a mixer, ball valves with thermometer, 2x contact probes.



Connection of the remote control to the I/O module via a WLAN router

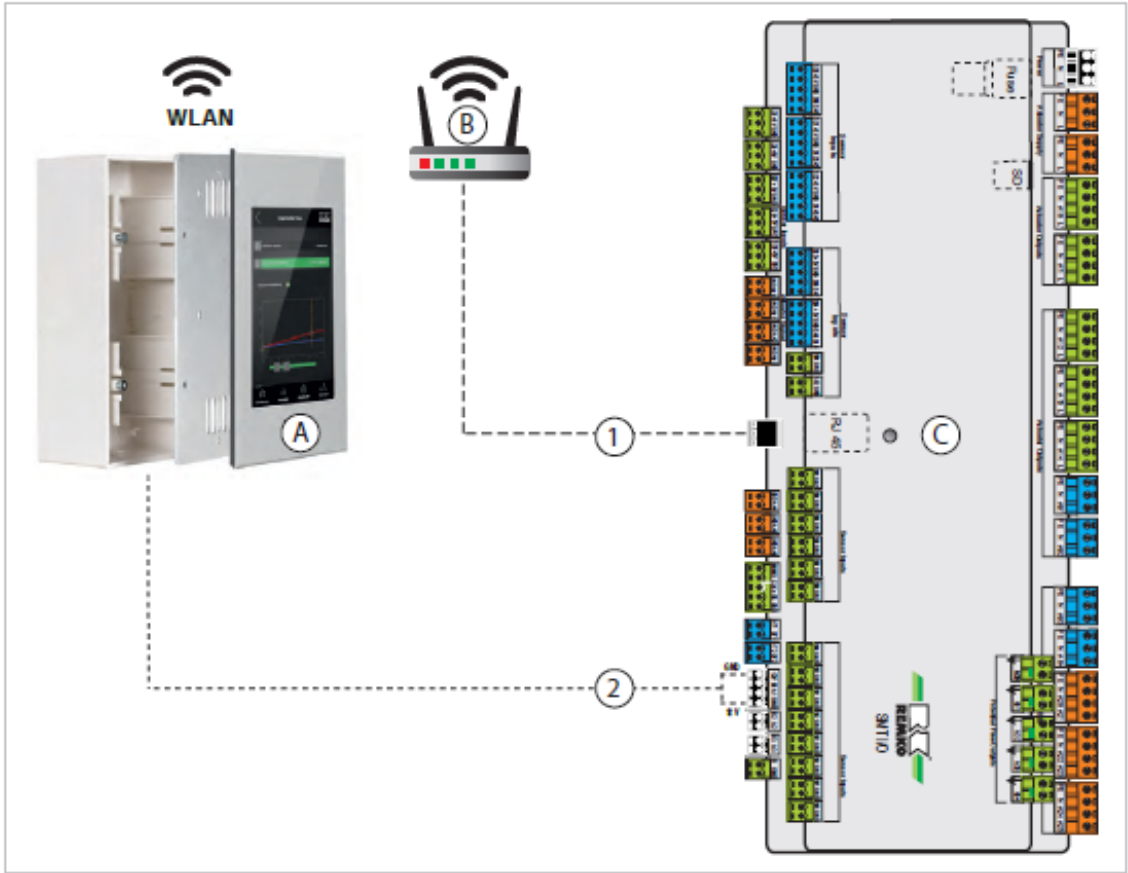
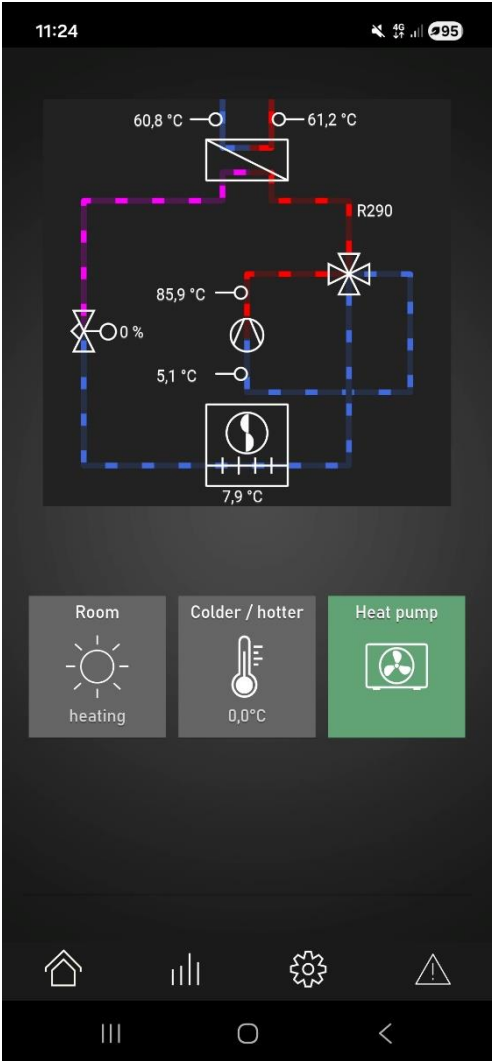
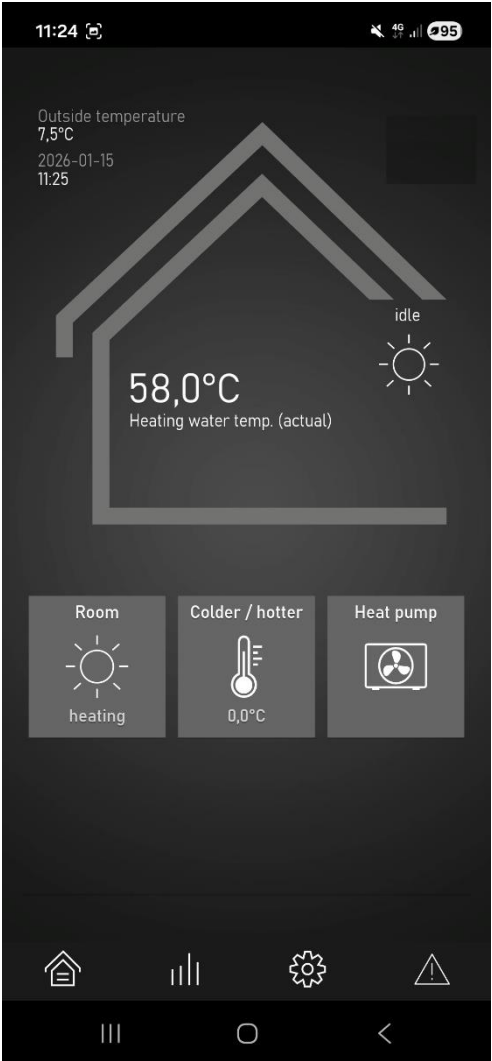


Fig. 17: Connection to the I/O module

- A: Remote control
- B: Customer's WLAN router
- C: I/O module

- 1: Ethernet interface/patch cable connection (LAN cable)
- 2: Power supply: +12V, terminal B1/A1



Options



R290 Product Launch - 2026

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