

Aeroheat Aeroheat CN

AH CN 5a, CN 7a and CN 9a



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Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 5a, air/water

Heat pump type	AH CN 5a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Performance data				
Heating capacity COP at				
A7/W35	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	7,1 4,8
A7/W45	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	6,8 3,8
A2/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	5,6 3,8
A10/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	7,5 5,0
A-7/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	4,6 3,2
A-15/W65		1 compressor	kW	–

Limits of application		
Heating circuit return min. Heating circuit flow max. heating	°C	20 ¹ – 70 ²
Heat source	°C	–20 – 35
Additional operating points	°C	A> -7 / 70 ²

Energy class Performance data (average climatic conditions)		
Energy efficiency class 35 °C 55 °C		A++ A++
Rated thermal output Prated 35 °C 55 °C	kW	6,0 5,0
Energy Efficiency Heating η_s 35 °C 55 °C	%	163 125
SCOP (according to EN 14825) 35 °C 55 °C		4,15 3,20

Sound		
Internal sound pressure level (open air test field, distance of 1 m around the engine, average)	dB(A)	–
External sound pressure level (open air test field, distance of 1 m around the air supplies, average)	dB(A)	45
Sound power inside	dB(A)	–
Sound power outside	dB(A)	57

Heat source		
Air volume flow at maximum external compression	m ³ /h	3000
Maximum external pressure	Pa	–

Heating circuit		
Volume flow: minimum flow rate nominal flow rate A7/W35 DIN EN14511-x: 2013 maximum flow rate	l/h	900 1200 1500
Pressure loss heat pump Δp volume flow	bar l/h	0,066 1200
Free compression heat pump Δp volume flow	bar l/h	– –
Content of buffer tank	l	–
3-way valve, heating/hot water		–

General unit data		
Dimensions depth x width x height	mm	505 x 1320 x 930
Total weight	kg	141
Connections: Heating circuit Heat source		G1" –
Refrigerant: Refrigerant type quantity	– kg	R-290 0,95
GWP / CO ₂ -e	– t	3 0
Free cross section, air channels	mm	–
Cross section, condensate water / length from unit	mm m	– –

Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 5a, air/water

Heat pump type	AH CN 5a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Electric		
Voltage code all-pole circuit breaker heat pump**)	- A	-
Voltage code circuit breaker control voltage**)	- A	-
Voltage code circuit breaker electric heating element**)	- A	-
Heat pump: Effective power consumption in standard point A7/W35 according to DIN EN14511-x: 2013: power consumption current consumption cos φ	kW A -	1,5 3,2 0,66
Heat pump: Maximum device current within the limits of application	A	4
Heat pump: Starting current: direct with soft starter	A A	- 20
Heat pump: Protection type	IP	24
Heat pump: Output electric heating element 3 2 1 phase	kW kW kW	- - -
Components: Circulating pump heating circuit at nominal flow rate: power consumption current consumption	kW A	- -

Other unit information		
Safety equipment: Safety component heating circuit safety component heat source	included in scope of delivery	no no
Heating and heat pump regulator	included in scope of delivery	no
Control and sensor wire	included in scope of delivery	yes
Power cable to unit	included in scope of delivery	yes
Electronic soft starter	integrated	yes
Expansion vessels: Heat source: scope of delivery volume initial pressure	l bar	no no no
Overflow valve	integrated	no
Vibration decouplers: Heat source	included in scope of delivery	no

*) depending on components tolerances and flow

**) comply with local regulations

1) hot water return

2) hot water flow

The performance data and the operating limits apply to clean heat exchangers

Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 7a, air/water

Heat pump type	AH CN 7a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Performance data				
Heating capacity COP at				
A7/W35	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	8,5 4,3
A7/W45	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	8,4 3,5
A2/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	7,7 3,8
A10/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	10,5 5,1
A-7/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	6,3 3,2
A-15/W65		1 compressor	kW	–

Limits of application		
Heating circuit return min. Heating circuit flow max. heating	°C	20 ¹ – 70 ²
Heat source	°C	–20 – 35
Additional operating points	°C	A> -7 / 70 ²

Energy class Performance data (average climatic conditions)		
Energy efficiency class 35 °C 55 °C		A++ A++
Rated thermal output Prated 35 °C 55 °C	kW	9,0 8,0
Energy Efficiency Heating η_s 35 °C 55 °C	%	158 127
SCOP (according to EN 14825) 35 °C 55 °C		3,83 3.23

Sound		
Internal sound pressure level (open air test field, distance of 1 m around the engine, average)	dB(A)	–
External sound pressure level (open air test field, distance of 1 m around the air supplies, average)	dB(A)	45
Sound power inside	dB(A)	–
Sound power outside	dB(A)	57

Heat source		
Air volume flow at maximum external compression	m ³ /h	3000
Maximum external pressure	Pa	–

Heating circuit		
Volume flow: minimum flow rate nominal flow rate A7/W35 DIN EN14511-x: 2013 maximum flow rate	l/h	1200 1600 2000
Pressure loss heat pump Δp volume flow	bar l/h	0,055 1600
Free compression heat pump Δp volume flow	bar l/h	– –
Content of buffer tank	l	–
3-way valve, heating/hot water		–

General unit data		
Dimensions depth x width x height	mm	505 x 1320 x 930
Total weight	kg	146
Connections: Heating circuit Heat source		G1" –
Refrigerant: Refrigerant type quantity	– kg	R-290 1,1
GWP / CO ₂ -e	– t	3 0
Free cross section, air channels	mm	–
Cross section, condensate water / length from unit	mm m	– –

Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 7a, air/water

Heat pump type	AH CN 7a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Electric		
Voltage code all-pole circuit breaker heat pump**)	- A	-
Voltage code circuit breaker control voltage**)	- A	-
Voltage code circuit breaker electric heating element**)	- A	-
Heat pump: Effective power consumption in standard point A7/W35 according to DIN EN14511-x: 2013: power consumption current consumption cos φ	kW A -	2,0 4,1 0,71
Heat pump: Maximum device current within the limits of application	A	5,5
Heat pump: Starting current: direct with soft starter	A A	- 22
Heat pump: Protection type	IP	24
Heat pump: Output electric heating element 3 2 1 phase	kW kW kW	- - -
Components: Circulating pump heating circuit at nominal flow rate: power consumption current consumption	kW A	- -

Other unit information		
Safety equipment: Safety component heating circuit safety component heat source	included in scope of delivery	no no
Heating and heat pump regulator	included in scope of delivery	no
Control and sensor wire	included in scope of delivery	yes
Power cable to unit	included in scope of delivery	yes
Electronic soft starter	integrated	yes
Expansion vessels: Heat source: scope of delivery volume initial pressure	I bar	no no no
Overflow valve	integrated	no
Vibration decouplers: Heat source	included in scope of delivery	no

*) depending on components tolerances and flow

**) comply with local regulations

1) hot water return

2) hot water flow

The performance data and the operating limits apply to clean heat exchangers

Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 9a, air/water

Heat pump type	AH CN 9a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Performance data				
Heating capacity COP at				
A7/W35	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	10,1 4,12
A7/W45	Standard point according to DIN EN14511-x: 2013	1 compressor	kW	9,9 3,5
A2/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	9,0 3,6
A10/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	11,3 4,5
A-7/W35	Operating point according to DIN EN14511-x: 2013	1 compressor	kW	7,5 3,12
A-15/W65		1 compressor	kW	–

Limits of application		
Heating circuit return min. Heating circuit flow max. heating	°C	20° – 70°
Heat source	°C	–20 – 35
Additional operating points	°C	A> -7 / 70°

Energy class Performance data (average climatic conditions)		
Energy efficiency class 35 °C 55 °C		A++ A++
Rated thermal output Prated 35 °C 55 °C	kW	10,0 10,0
Energy Efficiency Heating η_s 35 °C 55 °C	%	150 148
SCOP (according to EN 14825) 35 °C 55 °C		3,83 3,23

Sound		
Internal sound pressure level (open air test field, distance of 1 m around the engine, average)	dB(A)	–
External sound pressure level (open air test field, distance of 1 m around the air supplies, average)	dB(A)	50
Sound power inside	dB(A)	–
Sound power outside	dB(A)	62

Heat source		
Air volume flow at maximum external compression	m³/h	3500
Maximum external pressure	Pa	–

Heating circuit		
Volume flow: minimum flow rate nominal flow rate A7/W35 DIN EN14511-x: 2013 maximum flow rate	l/h	1600 2000 2500
Pressure loss heat pump Δp volume flow	bar l/h	0,076 2000
Free compression heat pump Δp volume flow	bar l/h	– –
Content of buffer tank	l	–
3-way valve, heating/hot water		–

General unit data		
Dimensions depth x width x height	mm	505 x 1320 x 930
Total weight	kg	149
Connections: Heating circuit Heat source		G1" –
Refrigerant: Refrigerant type quantity	– kg	R-290 1,17
GWP / CO ₂ -e	– t	3 0
Free cross section, air channels	mm	–
Cross section, condensate water / length from unit	mm m	– –

Technical data

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Aeroheat AH CN 9a, air/water

Heat pump type	AH CN 9a
Installation location	outdoors
Regler Aeroplus 2.0	not integrated
EHPA certificate	CH-HP-00946

Electric		
Voltage code all-pole circuit breaker heat pump**)	- A	-
Voltage code circuit breaker control voltage**)	- A	-
Voltage code circuit breaker electric heating element**)	- A	-
Heat pump: Effective power consumption in standard point A7/W35 according to DIN EN14511-x: 2013: power consumption current consumption cos φ	kW A -	2,5 5,0 0,72
Heat pump: Maximum device current within the limits of application	A	7,0
Heat pump: Starting current: direct with soft starter	A A	- 24
Heat pump: Protection type	IP	24
Heat pump: Output electric heating element 3 2 1 phase	kW kW kW	- - -
Components: Circulating pump heating circuit at nominal flow rate: power consumption current consumption	kW A	- -

Other unit information		
Safety equipment: Safety component heating circuit safety component heat source	included in scope of delivery	no no
Heating and heat pump regulator	included in scope of delivery	no
Control and sensor wire	included in scope of delivery	yes
Power cable to unit	included in scope of delivery	yes
Electronic soft starter	integrated	yes
Expansion vessels: Heat source: scope of delivery volume initial pressure	I bar	no no no
Overflow valve	integrated	no
Vibration decouplers: Heat source	included in scope of delivery	no

*) depending on components tolerances and flow

**) comply with local regulations

1) hot water return

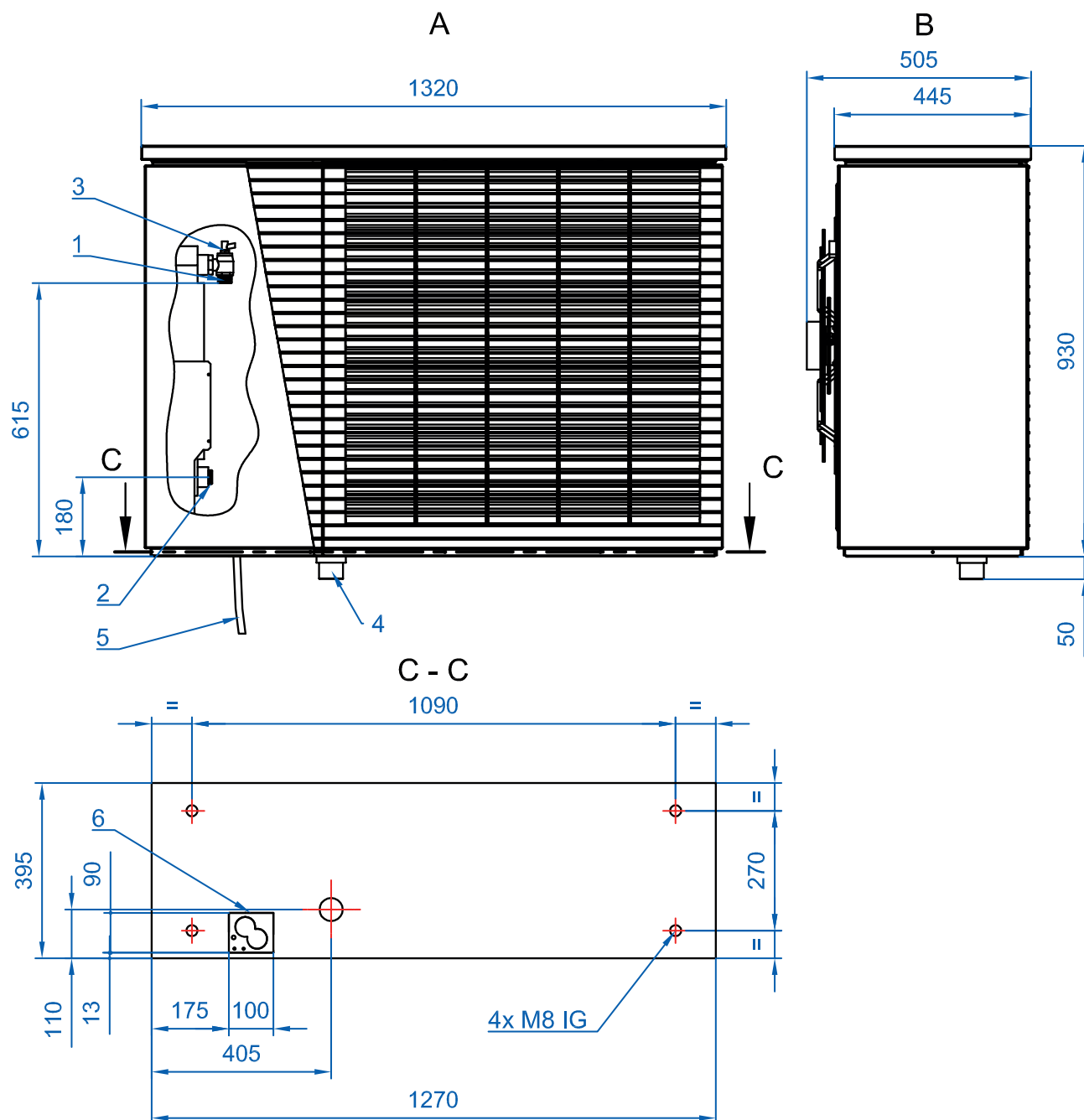
2) hot water flow

The performance data and the operating limits apply to clean heat exchangers

Dimension drawings

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Dimension drawings Aeroheat AH CN 5a, CN 7a and CN 9a



Keys

- A Front view
- B Side view
- C-C Section (floor slab)

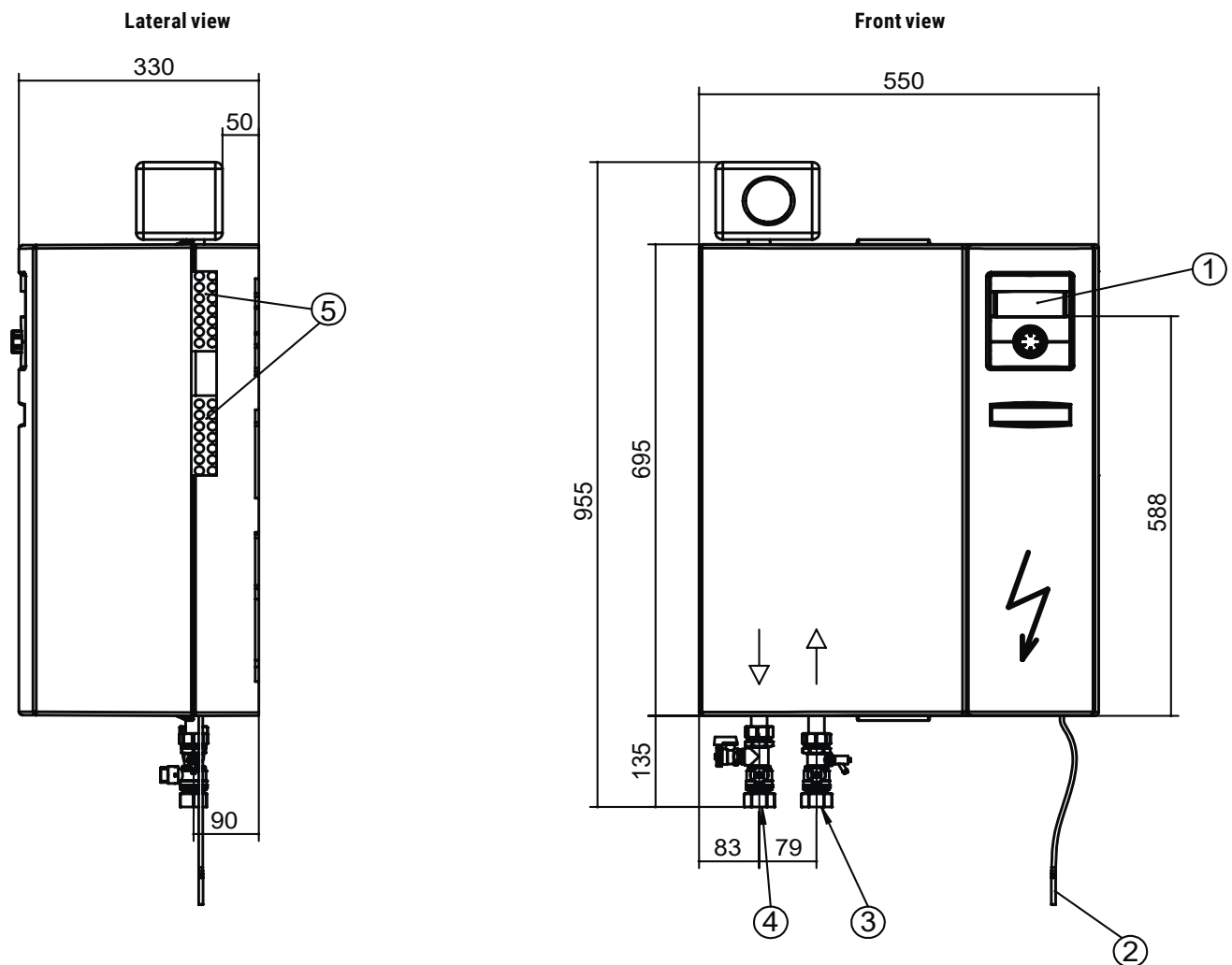
- 1 Heating water flow G1" DIN ISO 228 flat gasket
- 2 Heating water return flow G1" DIN ISO 228 flat gasket
- 3 Bleeder (in extra box)
- 4 Connection socket (in extra box) for condensate drain pipe DN40
- 5 Cables for power, control, BUS, length ~ 8 m from unit
- 6 Penetration for flow & return and cables

All dimensions in mm.

Dimension drawings

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Dimensions hydraulic module



Note

The hydraulic module is installed in the heating flow!

Keys

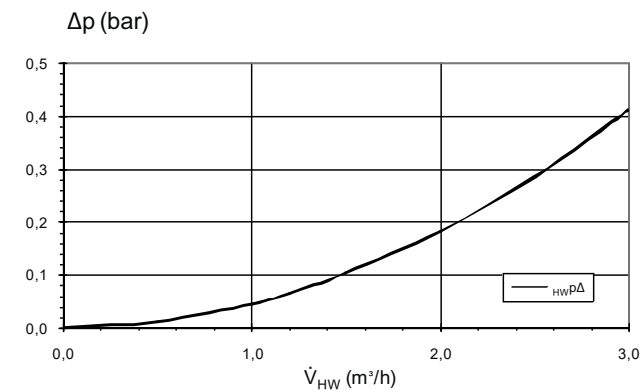
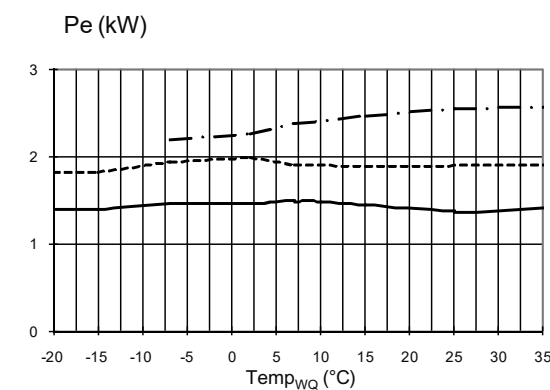
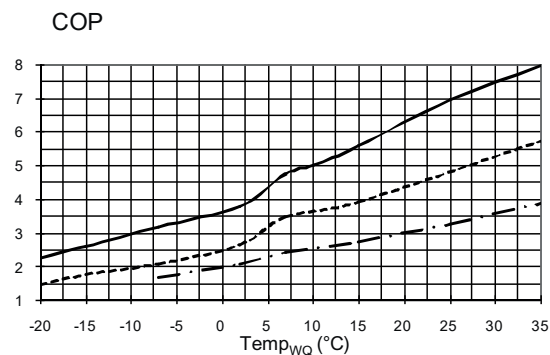
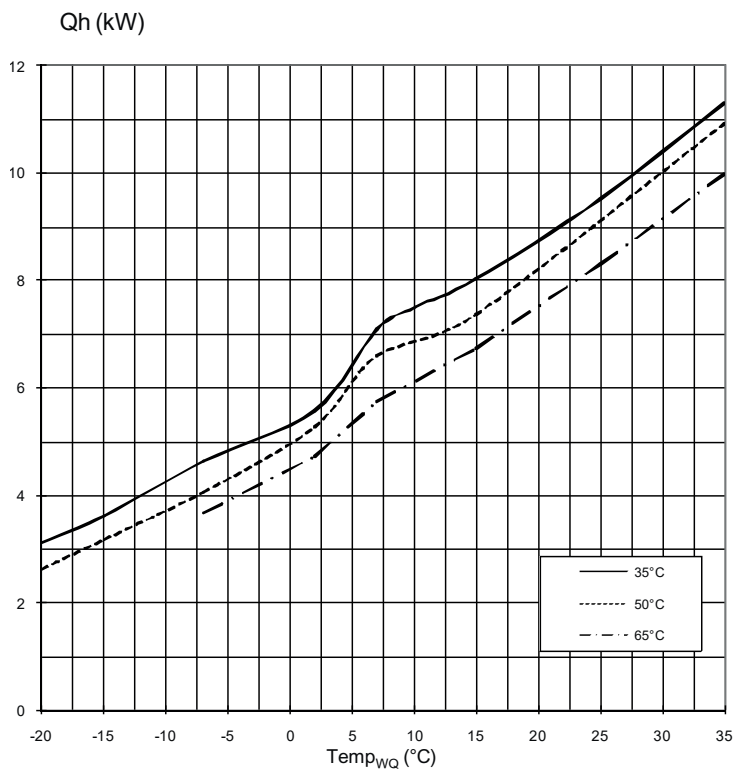
- 1 Control unit
- 2 Return flow sensor approx. 5,5 m from unit
- 3 Heating water inlet (flow) G 1" IG
- 4 Heating water outlet (flow) G 1" IG
- 5 Penetrations for electric/sensor cables

All dimensions in mm.

Power curves

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Heating mode Aeroheat CN 5a



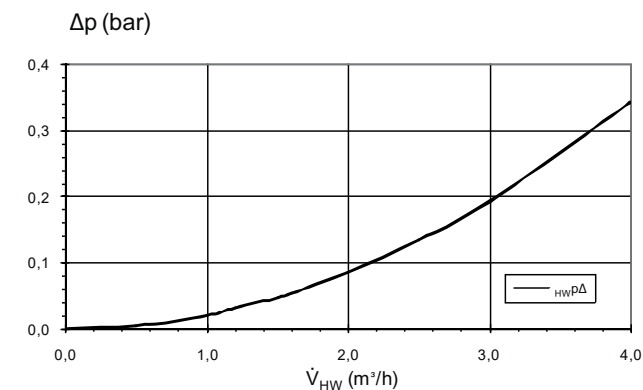
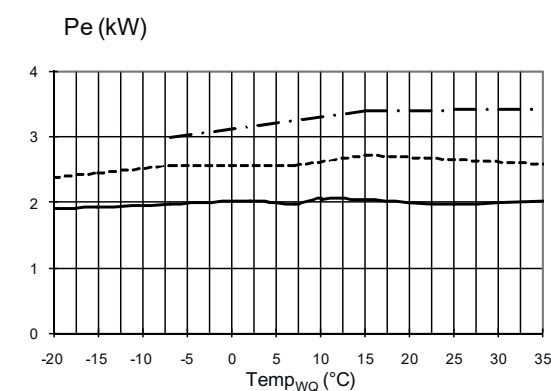
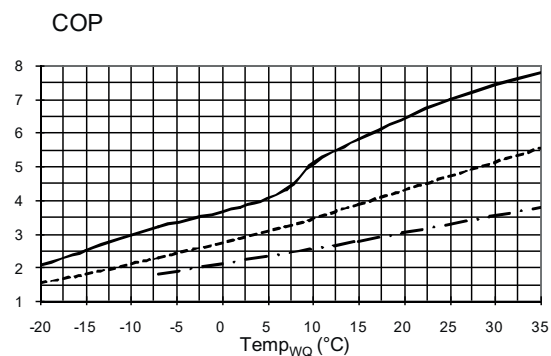
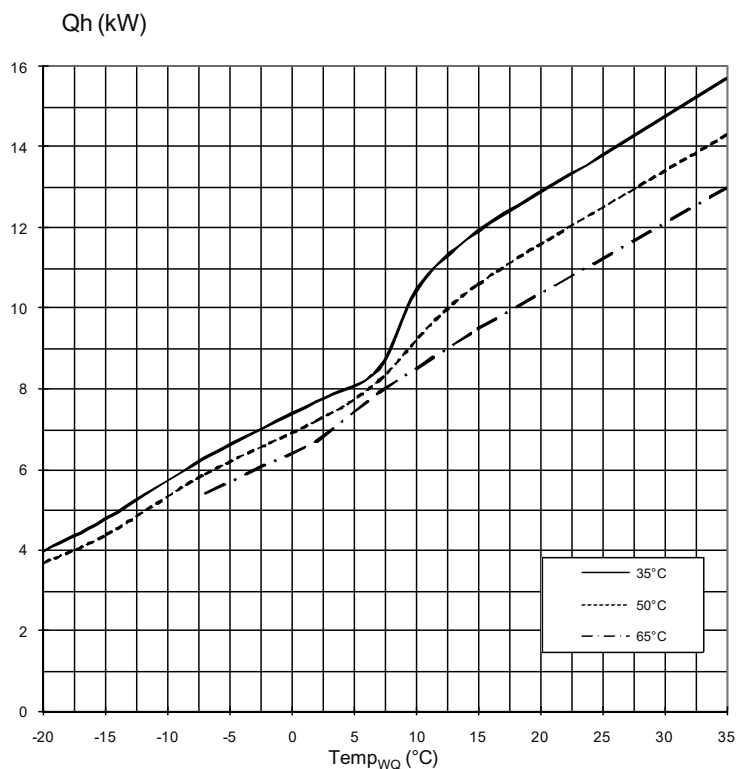
Legend

V _{HW}	Volume flow, heating water
Temp _{WQ}	Heat source temperature
Q _h	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW}	Pressure loss heat pump
VD	Compressor(s)

Power curves

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Heating mode Aeroheat CN 7a



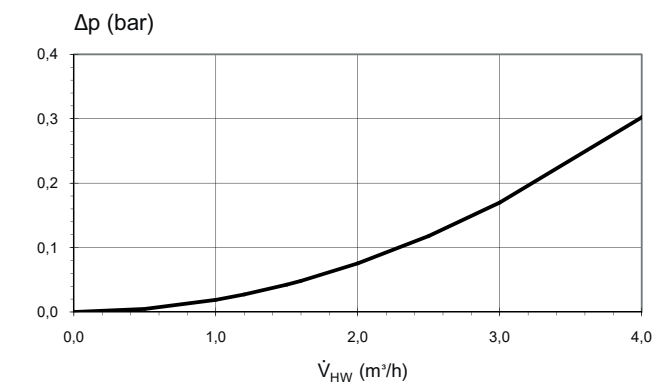
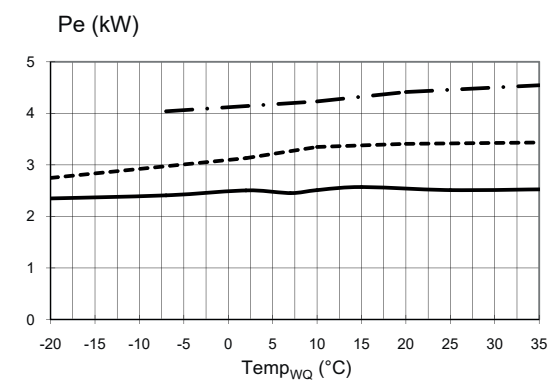
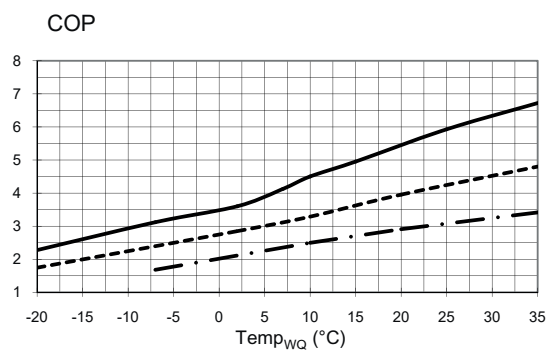
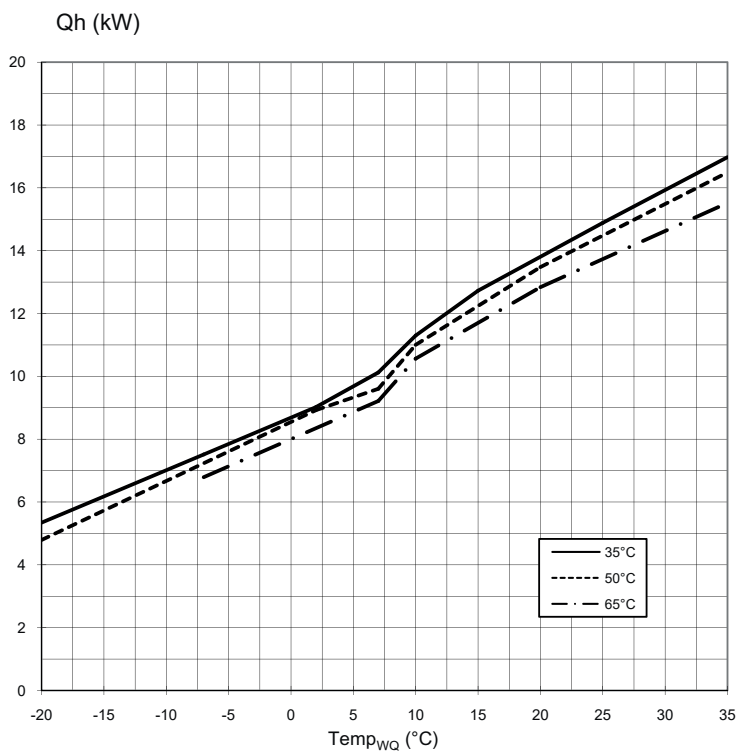
Legend

V _{HW}	Volume flow, heating water
Temp _{WQ}	Heat source temperature
Q _h	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW}	Pressure loss heat pump
VD	Compressor(s)

Power curves

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Heating mode Aeroheat CN 9a



Legend

$\dot{V}_{HW}$	Volume flow, heating water
Temp _{WQ}	Heat source temperature
Q _h	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW}	Pressure loss heat pump
VD	Compressor(s)

Function description

Heat pump

Start the heat pump via the external temperature sensor TA. Depending on the hydraulic integration, this works in the buffer storage or directly in the heating circulation. The heat pump is switched on and off via the TRL sensor depending on the heat requirement and outside temperature.

To prevent the heat pump from wobbling, a restart delay is built in. With direct heating operation (e.g. underfloor heating), the HUP condenser pump is in operation during the entire heating period.

Domestic hot water charging

Domestic hot water charging is carried out according to a time programme to the respective set point. The charging is enabled via the temperature sensor TBW and the switching valve BUP is switched over. The electrical heating element ZW2 in the DHW storage tank is released by the heat pump controller (further releases required).

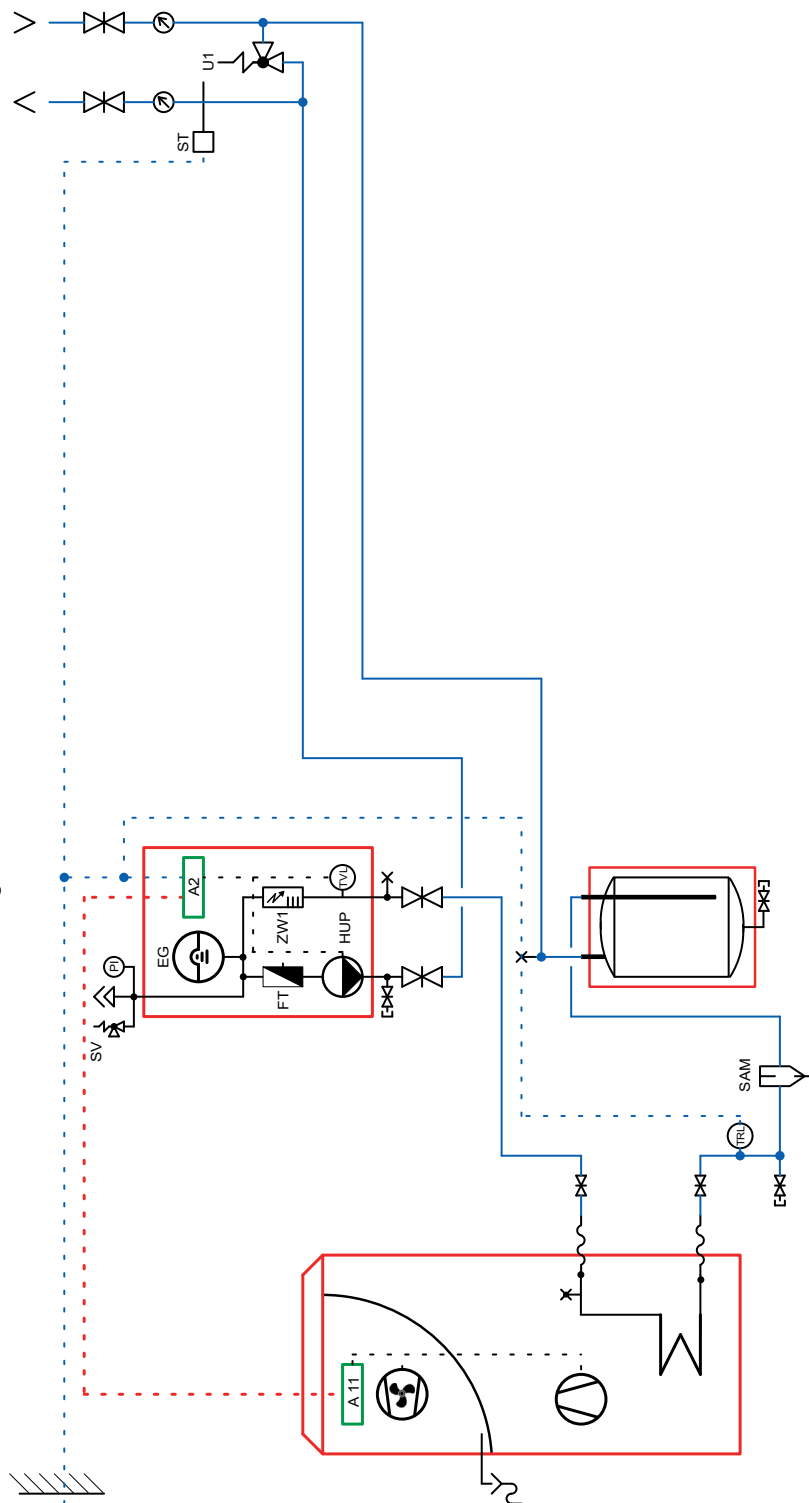
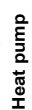
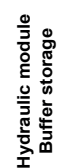
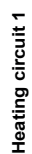
An external heat exchanger is used for DHW storage tanks without an internal register. The BUP intermediate circuit pump is controlled in parallel with the deflector valve.

Buffer storage

If a buffer tank is used in the hydraulic system, the generator side and the consumer side are decoupled. The storage tank is used to bridge generator blocks. The set point of the storage tank is calculated by the maximum requirement of the consumer groups.

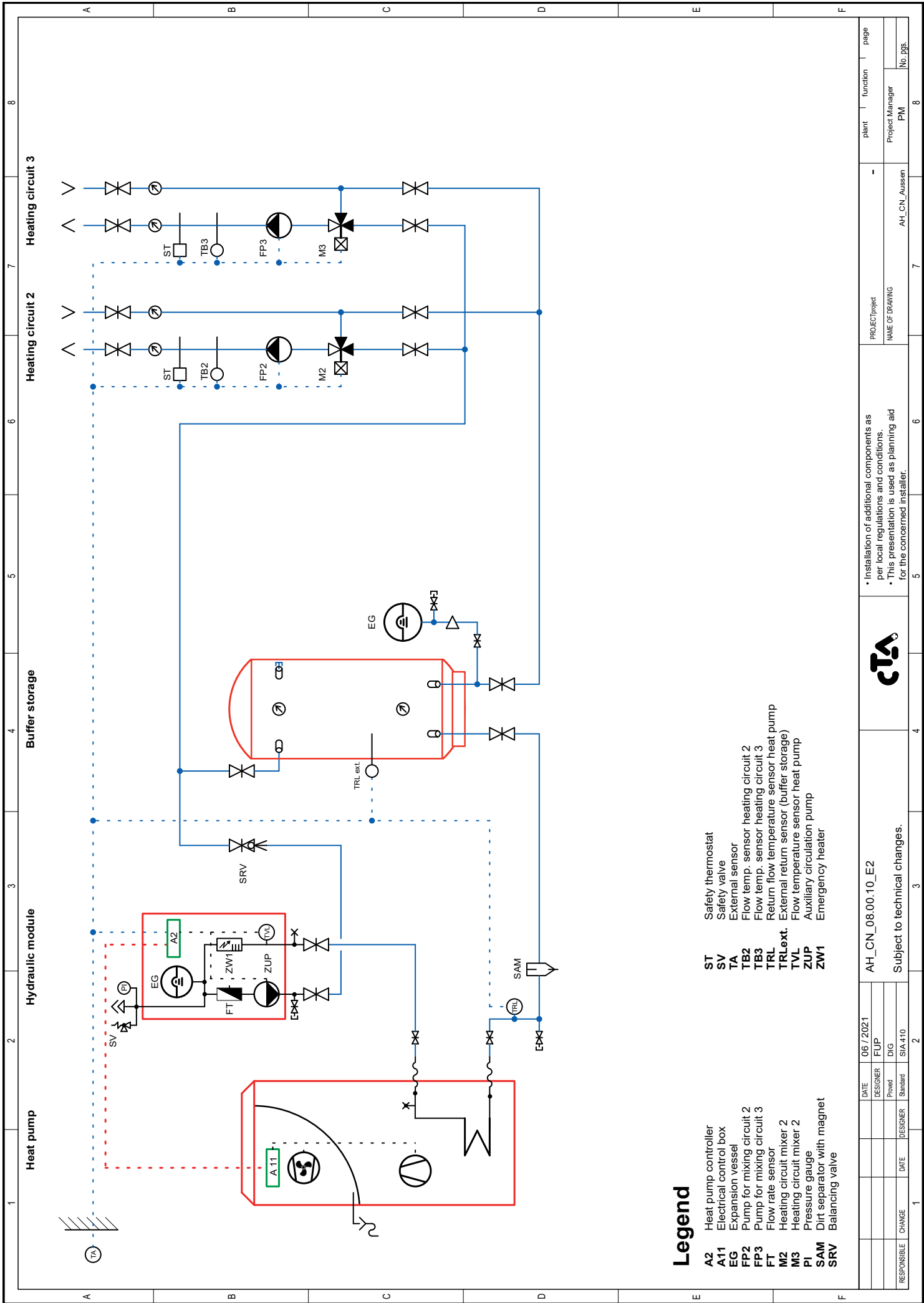
Discharge control

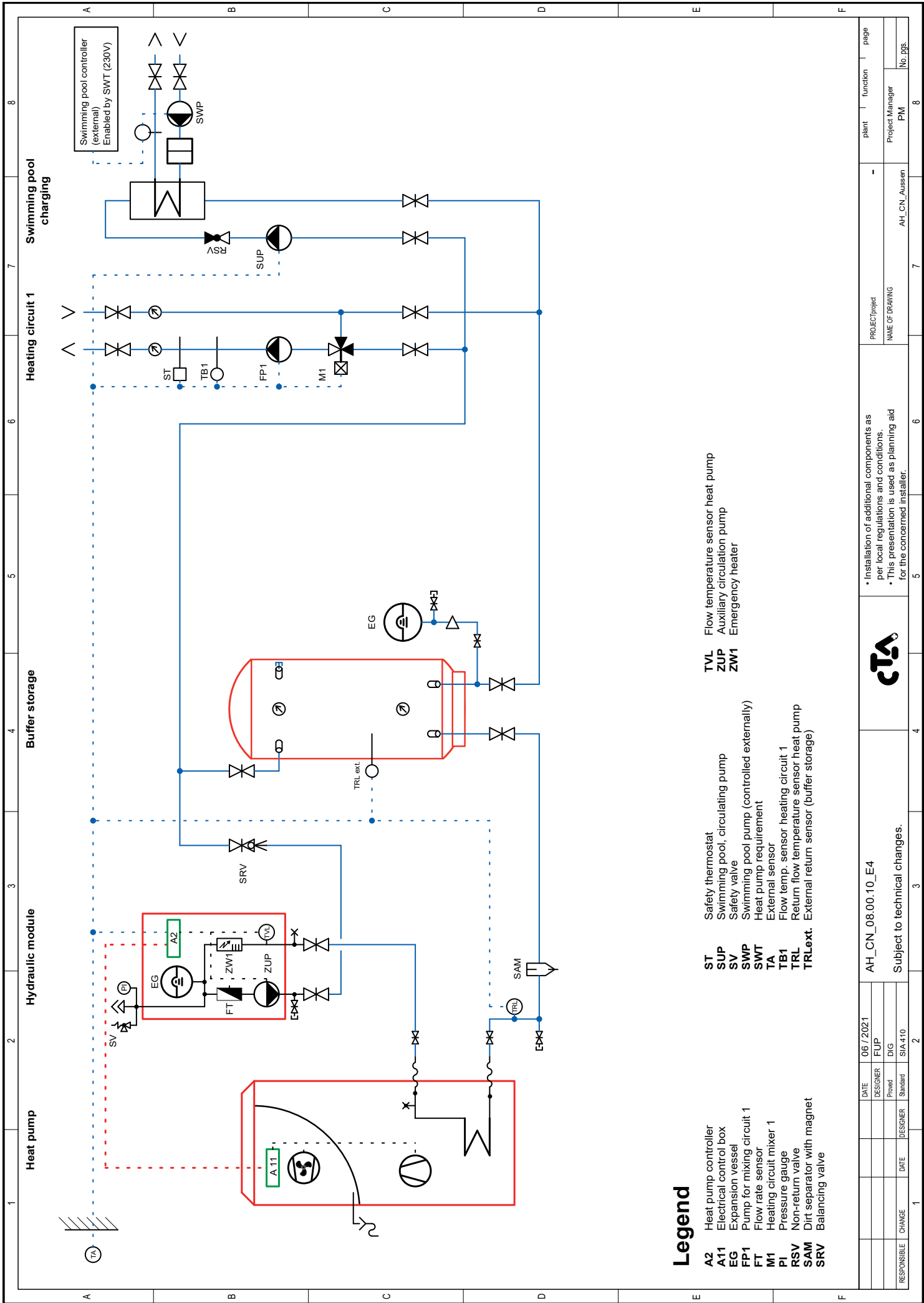
The set point for the heating flow is calculated with the current outside temperature and the set heating characteristic. Discharge control now adjusts the flow temperature TB1 with the mixing valve M1 to this set point. The HUP discharge pump is in operation during the entire heating period.

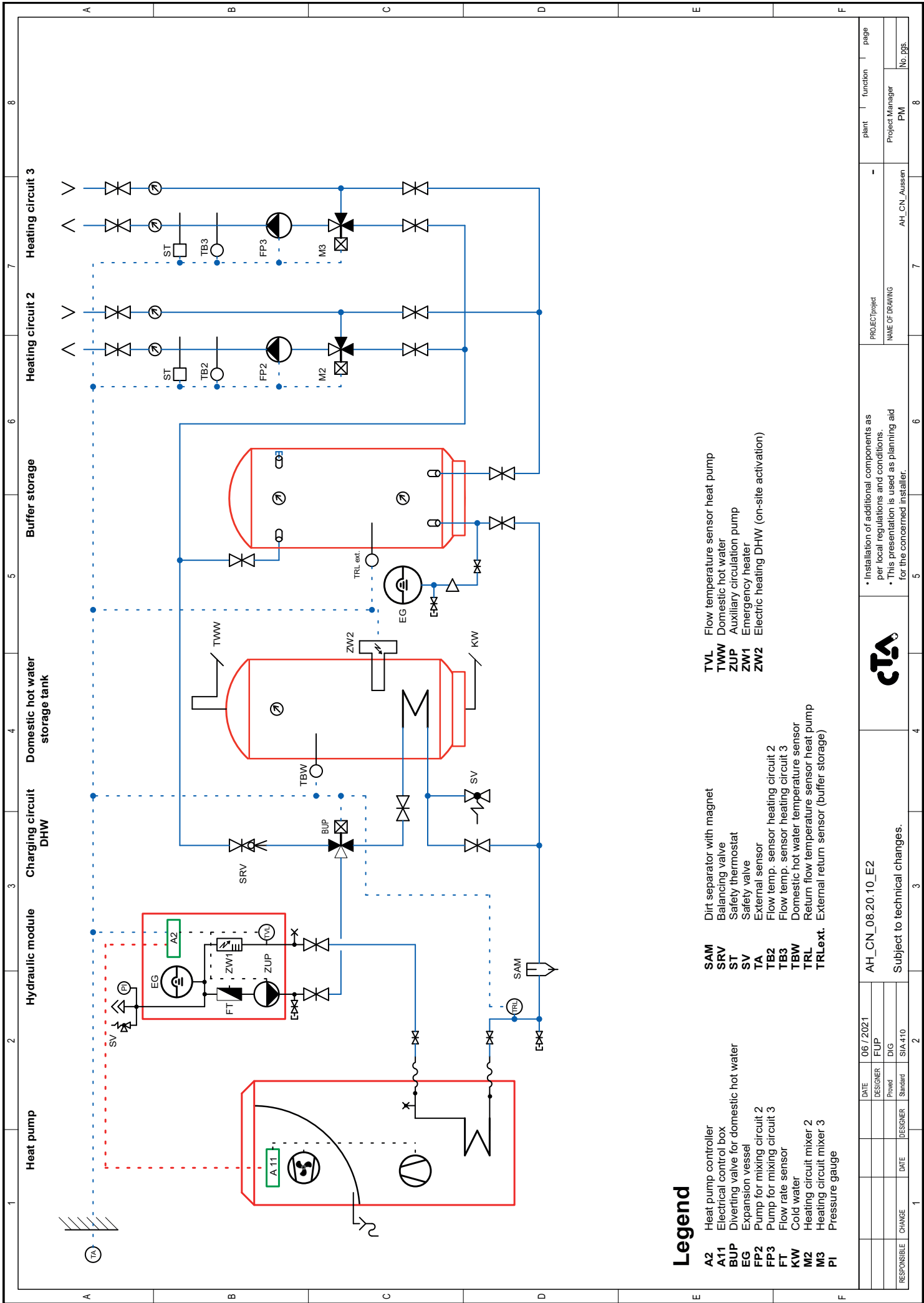


Legend

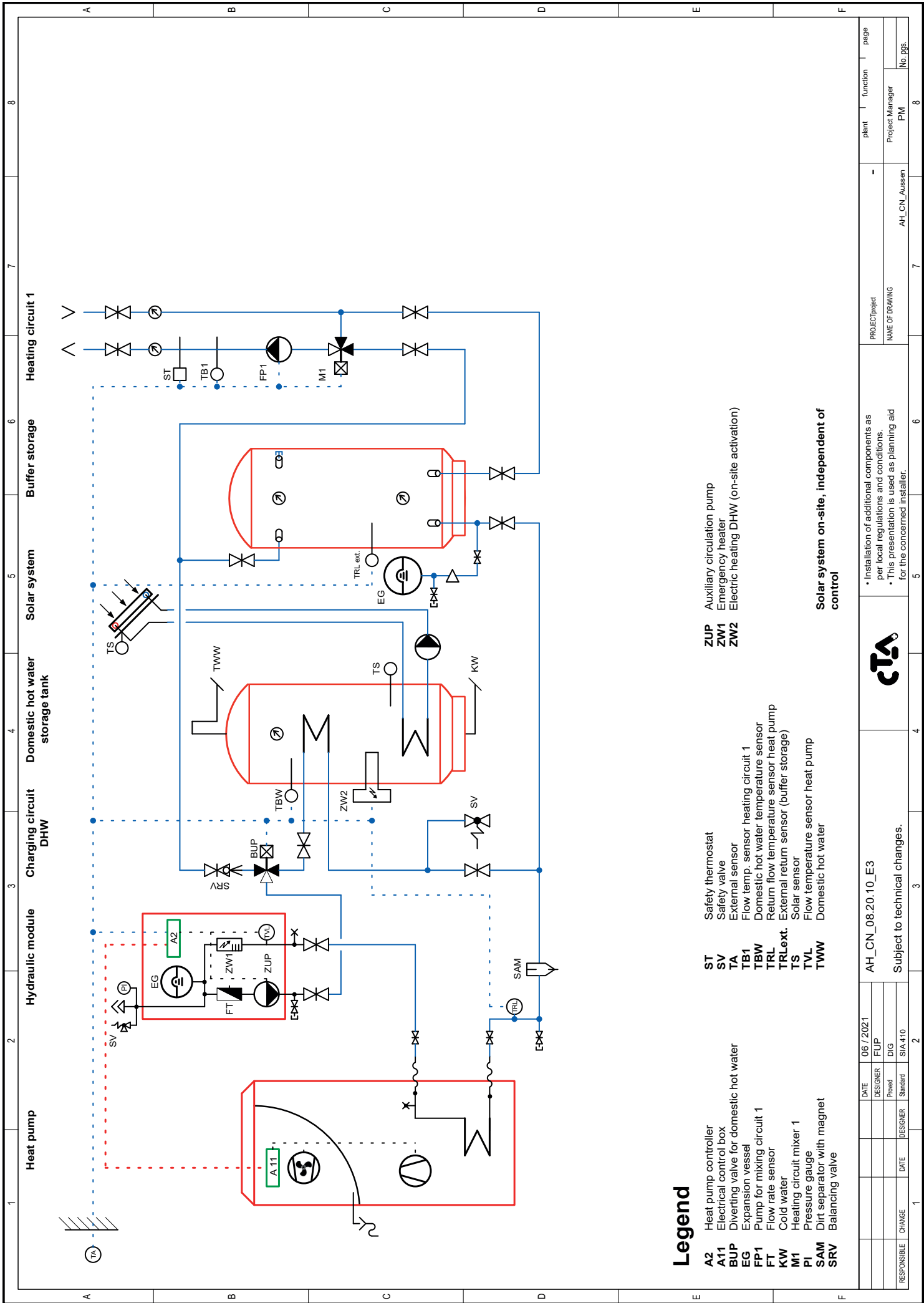
- | Symbol | Description | Symbol | Description |
|--------|----------------------------|--------|--------------------------------|
| A2 | Heat pump controller | TA | External sensor |
| At1 | Electrical control box | TRL | Return flow temperature sensor |
| EV | Expansion vessel | TVL | Flow temperature sensor |
| FT | Flow rate sensor | U1 | Overflow valve |
| HUP | Heating circulation pump | ZW1 | Emergency heater |
| PI | Pressure gauge | | |
| SAM | Dirt separator with magnet | | |
| ST | Safety thermostat | | |
| SV | Safety valve | | |

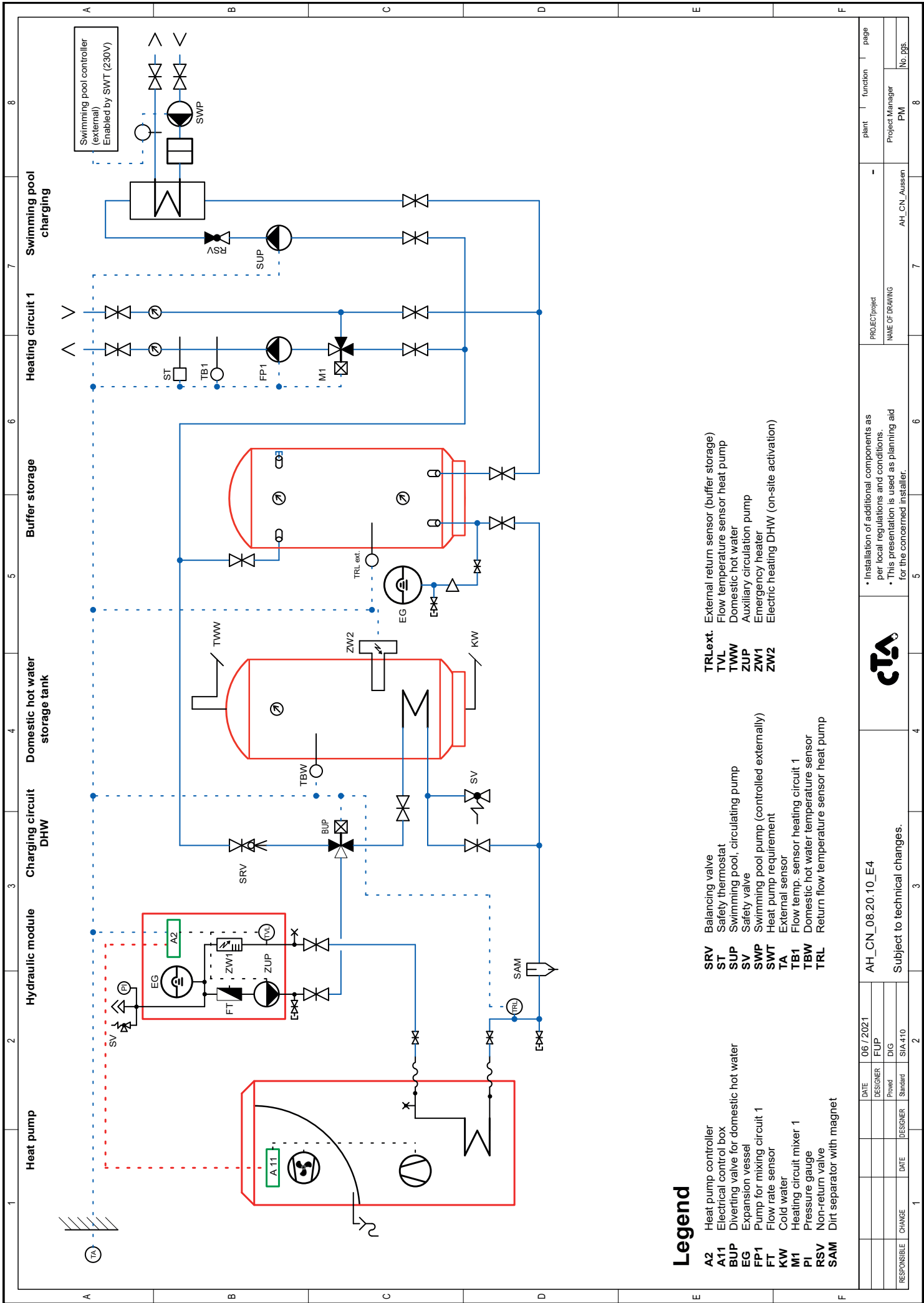








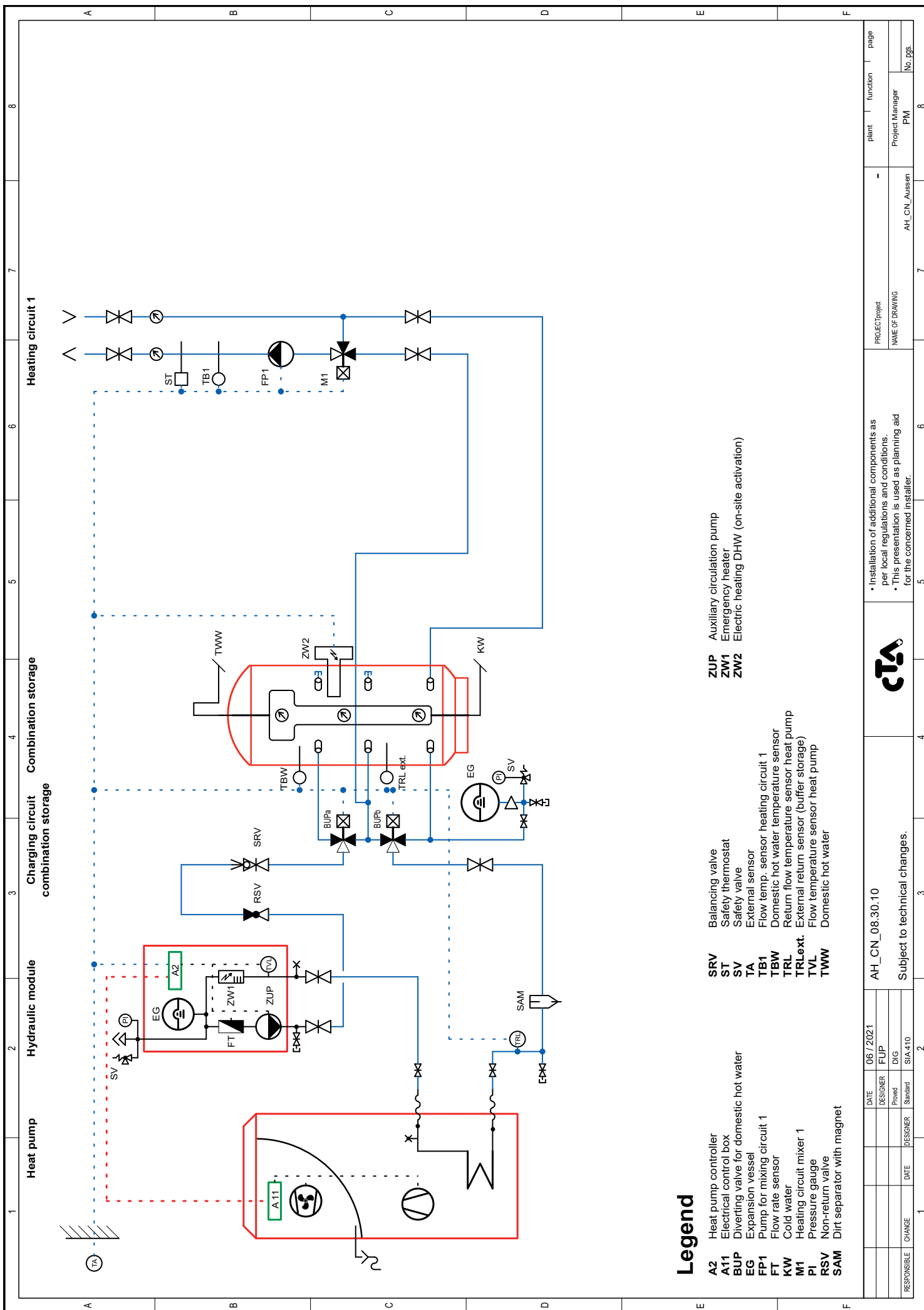




Legend

- | | | | | | |
|------------|--|------------|--|-----------------|---|
| A2 | Heat pump controller | SRV | Balancing valve | TRL ext. | External return sensor (buffer storage) |
| A11 | Electrical control box | ST | Safety thermostat | TVL | Flow temperature sensor heat pump |
| BUP | Diverting valve for domestic hot water | SUP | Swimming pool, circulating pump | TWW | Domestic hot water |
| EG | Expansion vessel | SV | Safety valve | ZUP | Auxiliary circulation pump |
| FP1 | Pump for mixing circuit 1 | SWP | Swimming pool pump (controlled externally) | ZW1 | Emergency heater |
| FT | Flow rate sensor | SWT | Heat pump requirement | ZW2 | Electric heating DHW (on-site activation) |
| KW | Cold water | TA | External sensor | | |
| M1 | Heating circuit mixer 1 | TB1 | Flow temp. sensor heating circuit 1 | | |
| PL | Pressure gauge | TBW | Domestic hot water temperature sensor | | |
| RSV | Non-return valve | TRL | Return flow temperature sensor heat pump | | |
| SAM | Dirt separator with magnet | | | | |

AH_CN_08.20.10_E4		PROJECT/Project		plant		function		page	
Subject to technical changes.		NAME OF DRAWING		AH_CN_Aussen		Project Manager		PM	
								No. pgs.	
								8	



DATE

06 / 2021

FUP

DESIGNER

Powel

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Standard

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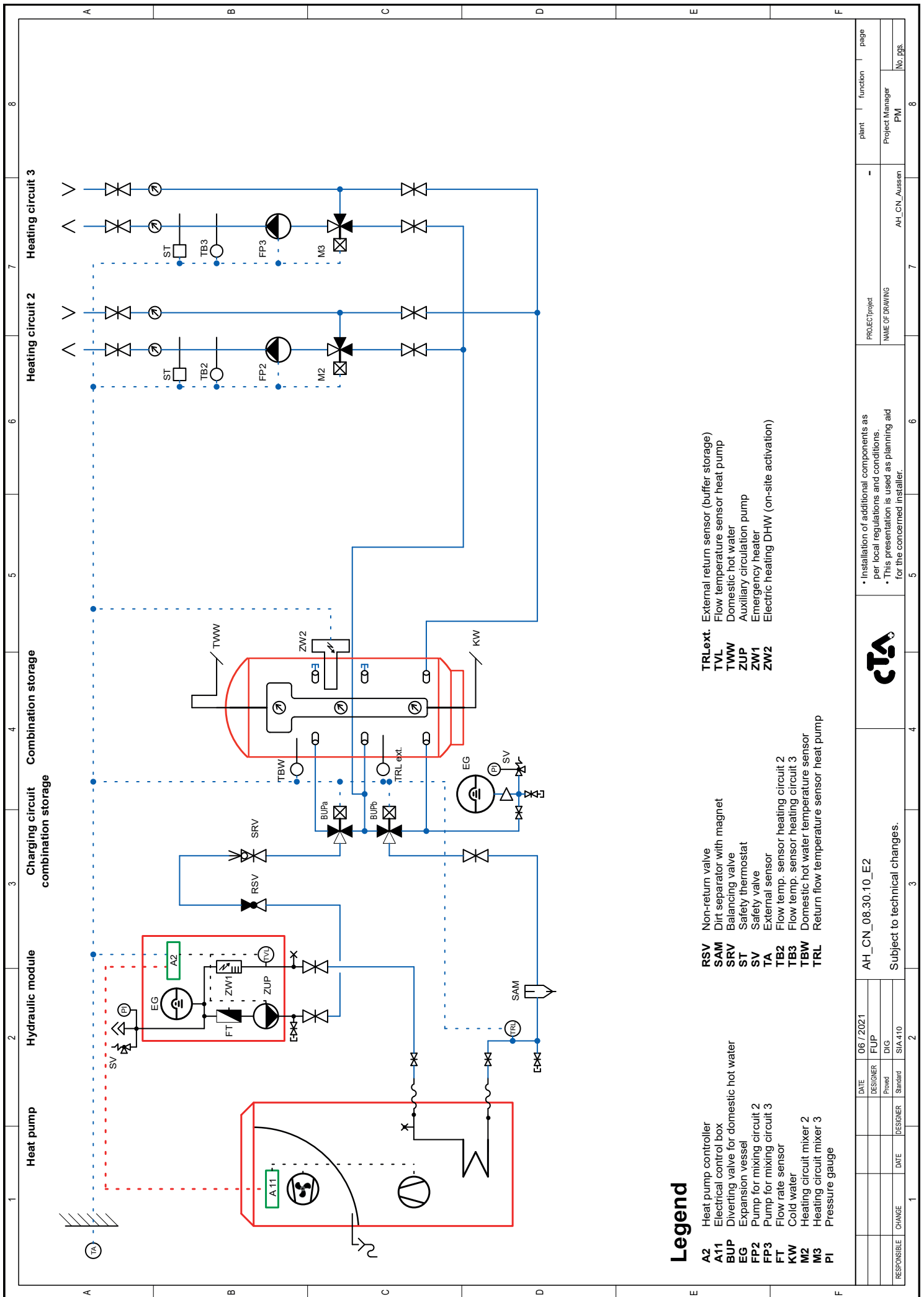
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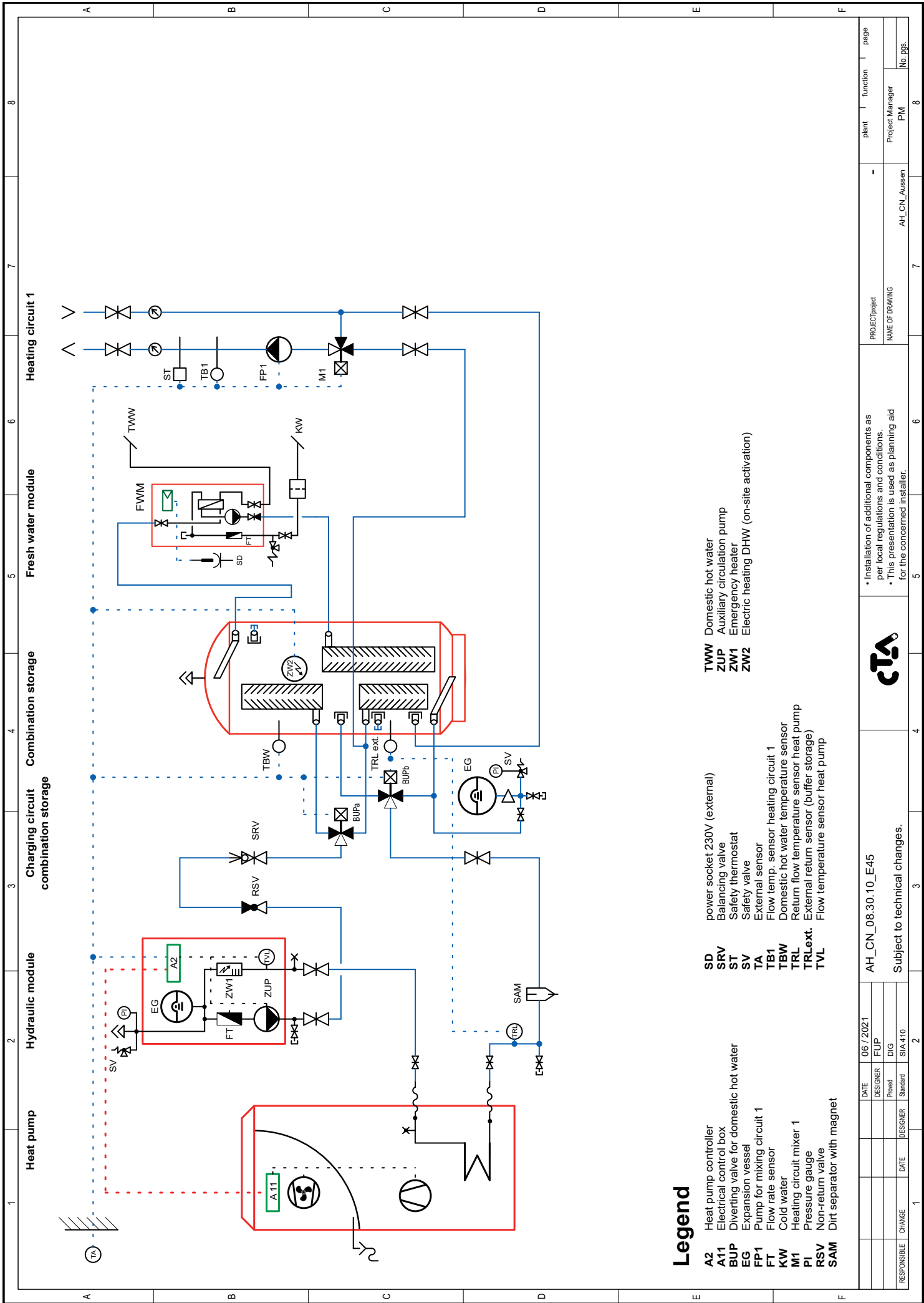
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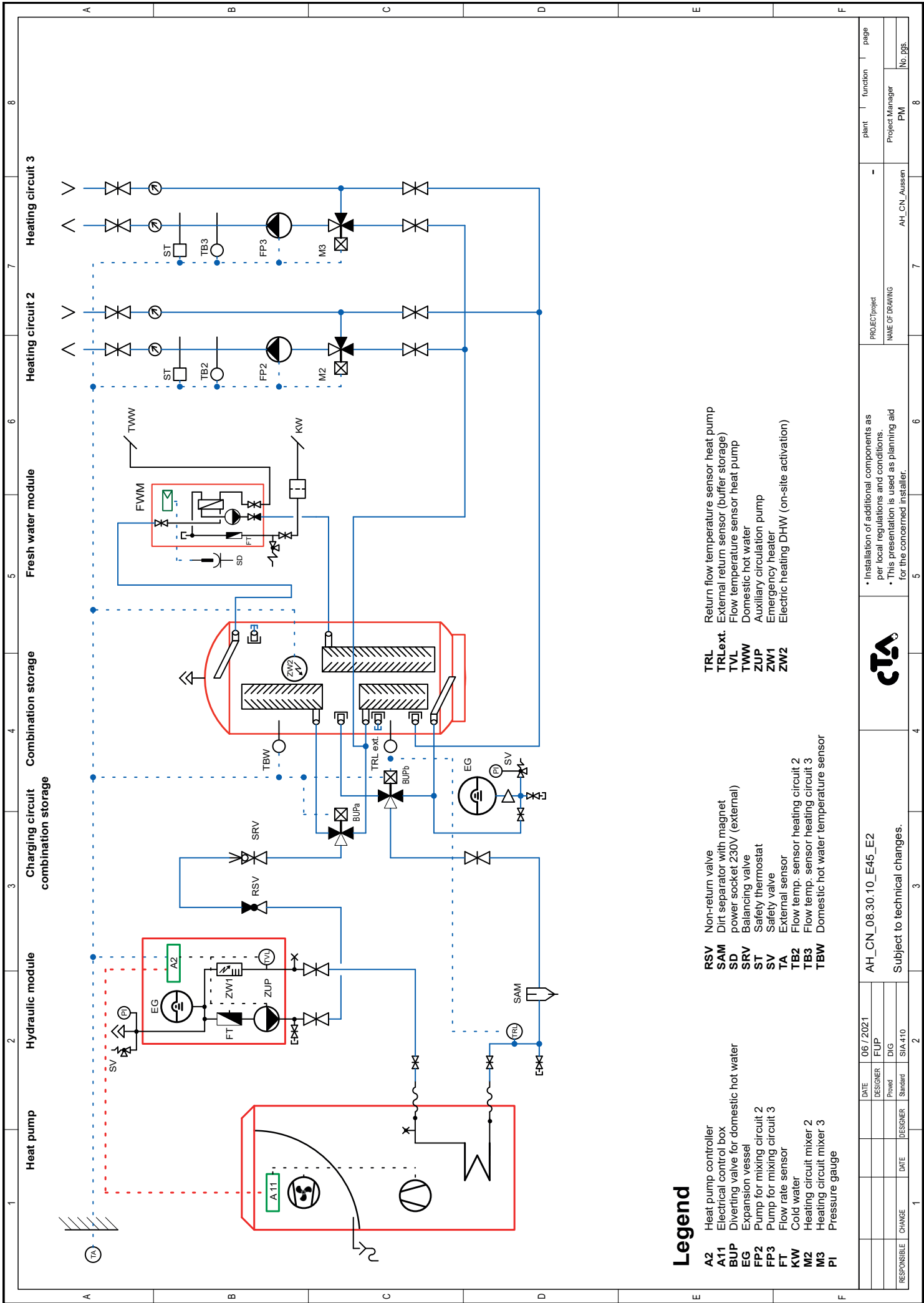
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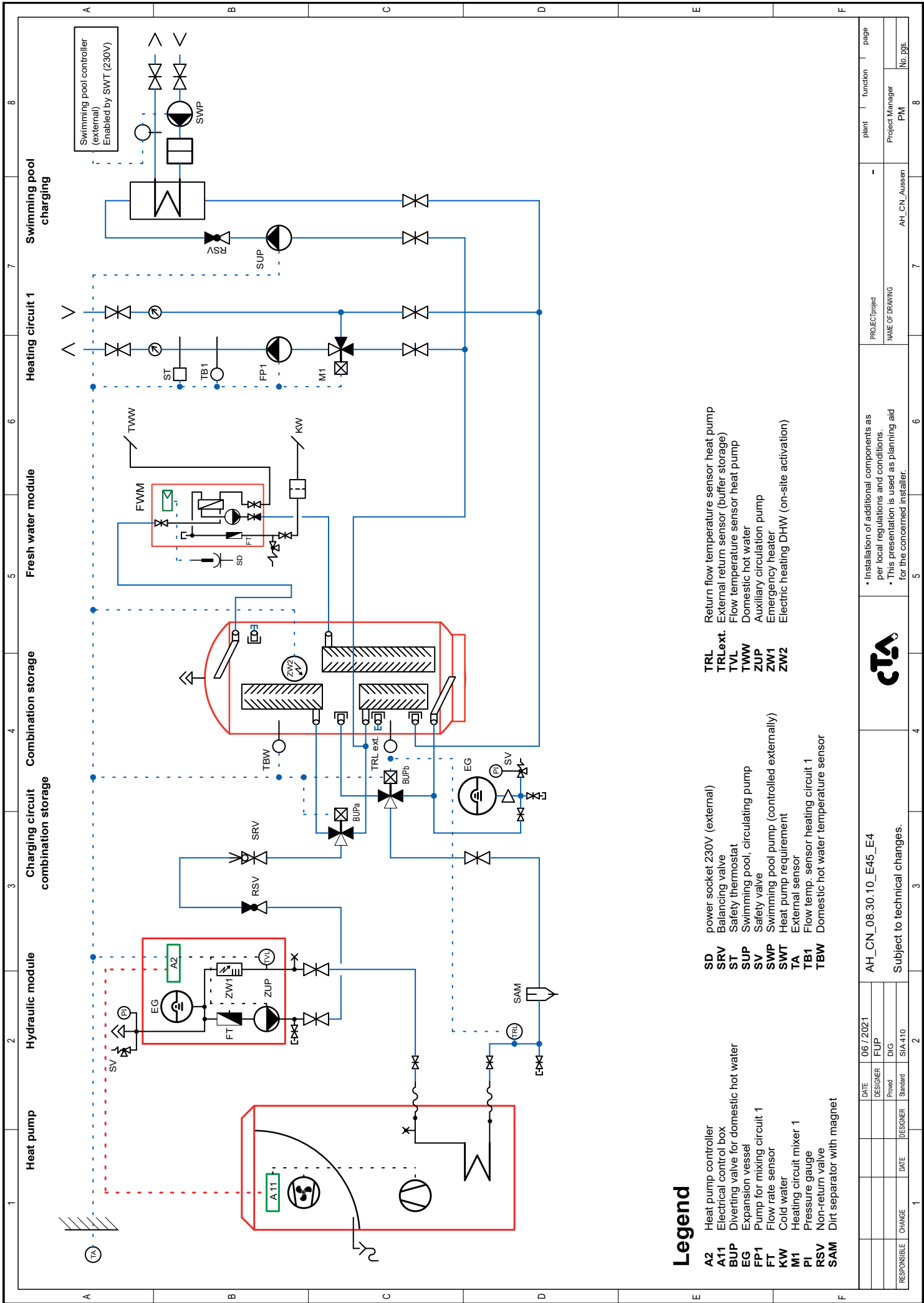




Legend

- | | | | | | |
|------------|--|------------|---------------------------------------|----------------|---|
| A2 | Heat pump controller | RSV | Non-return valve | TRL | Return flow temperature sensor heat pump |
| A11 | Electrical control box | SAM | Dirt separator with magnet | TRLExt. | External return sensor (buffer storage) |
| SD | Diverting valve for domestic hot water | SD | power socket 230V (external) | TVL | Flow temperature sensor heat pump |
| EG | Expansion vessel | SRV | Balancing valve | TWW | Domestic hot water |
| FP2 | Pump for mixing circuit 2 | ST | Safety thermostat | ZUP | Auxiliary circulation pump |
| FP3 | Pump for mixing circuit 3 | SV | Safety valve | ZW1 | Emergency heater |
| FT | Flow rate sensor | TA | External sensor | ZW2 | Electric heating DHW (on-site activation) |
| KW | Cold water | TB2 | Flow temp. sensor heating circuit 2 | | |
| M2 | Heating circuit mixer 2 | TB3 | Flow temp. sensor heating circuit 3 | | |
| M3 | Heating circuit mixer 3 | TBW | Domestic hot water temperature sensor | | |
| PI | Pressure gauge | | | | |

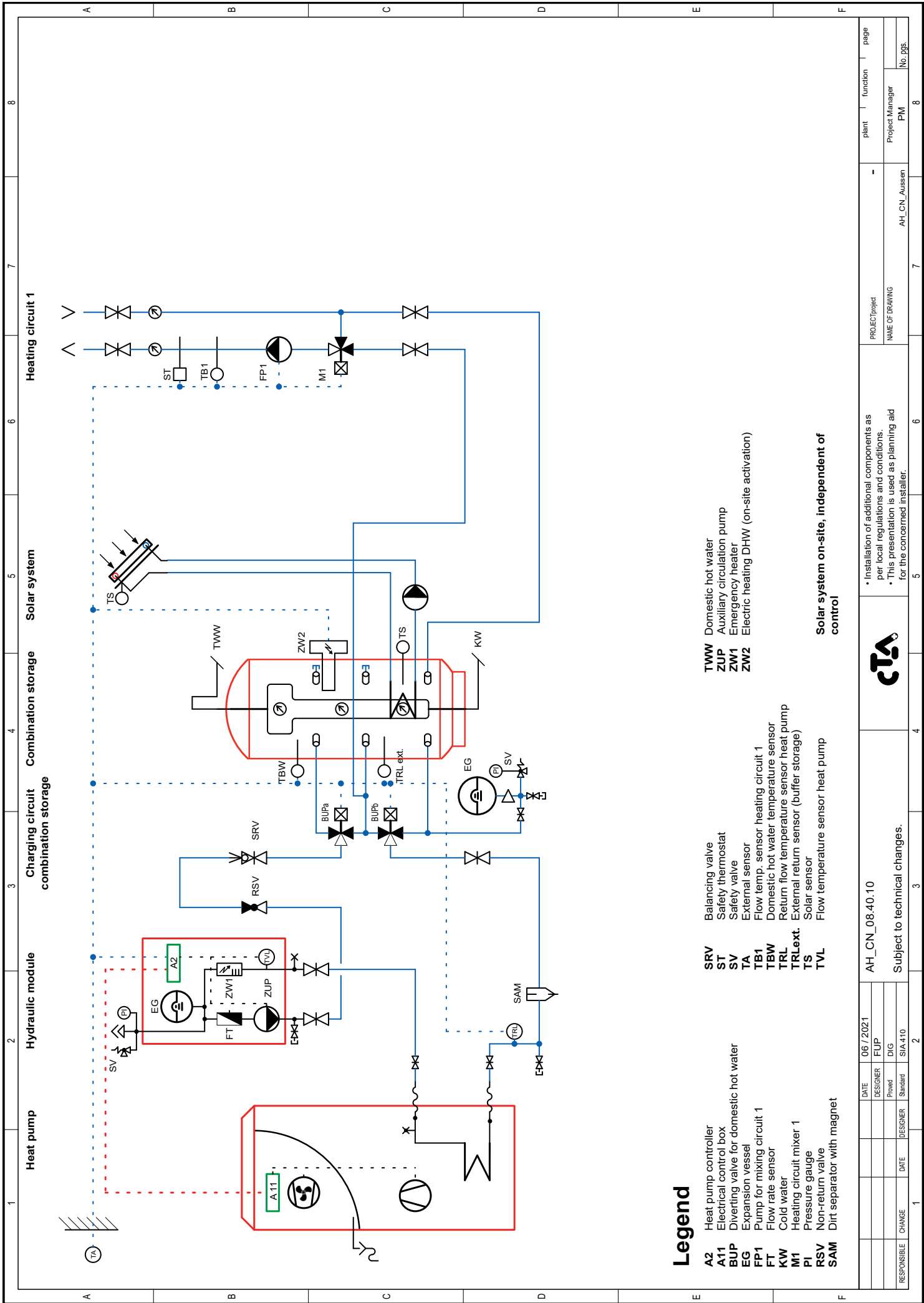
RESPONSIBLE		CHANGE	DATE	DESIGNER	SIA+10		Subject to technical changes.		AH_CN_08.30.10_E45_E2				• Installation of additional components as per local regulations and conditions. • This presentation is used as planning aid for the concerned installer.		PROJECT/Project		plant		function		page		
					FUP										-								
					DIG										NAME OF DRAWING		Project Manager						
					Standard										AH_CN_Aussen		PM				No. pgs.		
1		2		3		4		5		6		7		8									



Legend

- | | | | |
|------------|--|-----------------|---|
| A2 | Heat pump controller | TRL | Return flow temperature sensor heat pump |
| A11 | Electrical control box | TRL ext. | External return temperature sensor (buffer storage) |
| BUP | Diverting valve for domestic hot water | TVL | Flow temperature sensor heat pump |
| EG | Expansion vessel | TWW | Domestic hot water |
| FP1 | Pump for mixing circuit 1 | ZUP | Auxiliary circulation pump |
| FT | Flow rate sensor | ZW1 | Emergency heater |
| KW | Cold water | ZW2 | Electric heating DHW (on-site activation) |
| M1 | Heating circuit mixer 1 | | |
| PI | Pressure gauge | | |
| RSV | Non-return valve | | |
| SAM | Dirt separator with magnet | | |
| SD | power socket 230V (external) | | |
| SRV | Balancing valve | | |
| ST | Safety thermostat | | |
| SUP | Swimming pool, circulating pump | | |
| SV | Safety valve | | |
| SWP | Swimming pool pump (controlled externally) | | |
| SWT | Heat pump requirement | | |
| TA | External sensor | | |
| TB1 | Flow temp. sensor heating circuit 1 | | |
| TBW | Domestic hot water temperature sensor | | |

RESPONSIBLE		CHANGE	DATE	DESIGNER	Standard	SIA 410	2	Subject to technical changes.		AH_CN_08.30.10_E45_E4		CTA		Installation of additional components as per local regulations and conditions. This presentation is used as planning aid for the concerned installer.		PROJECT/Project	NAME OF DRAWING	PM	AH_CN_Aussen	7	8	8
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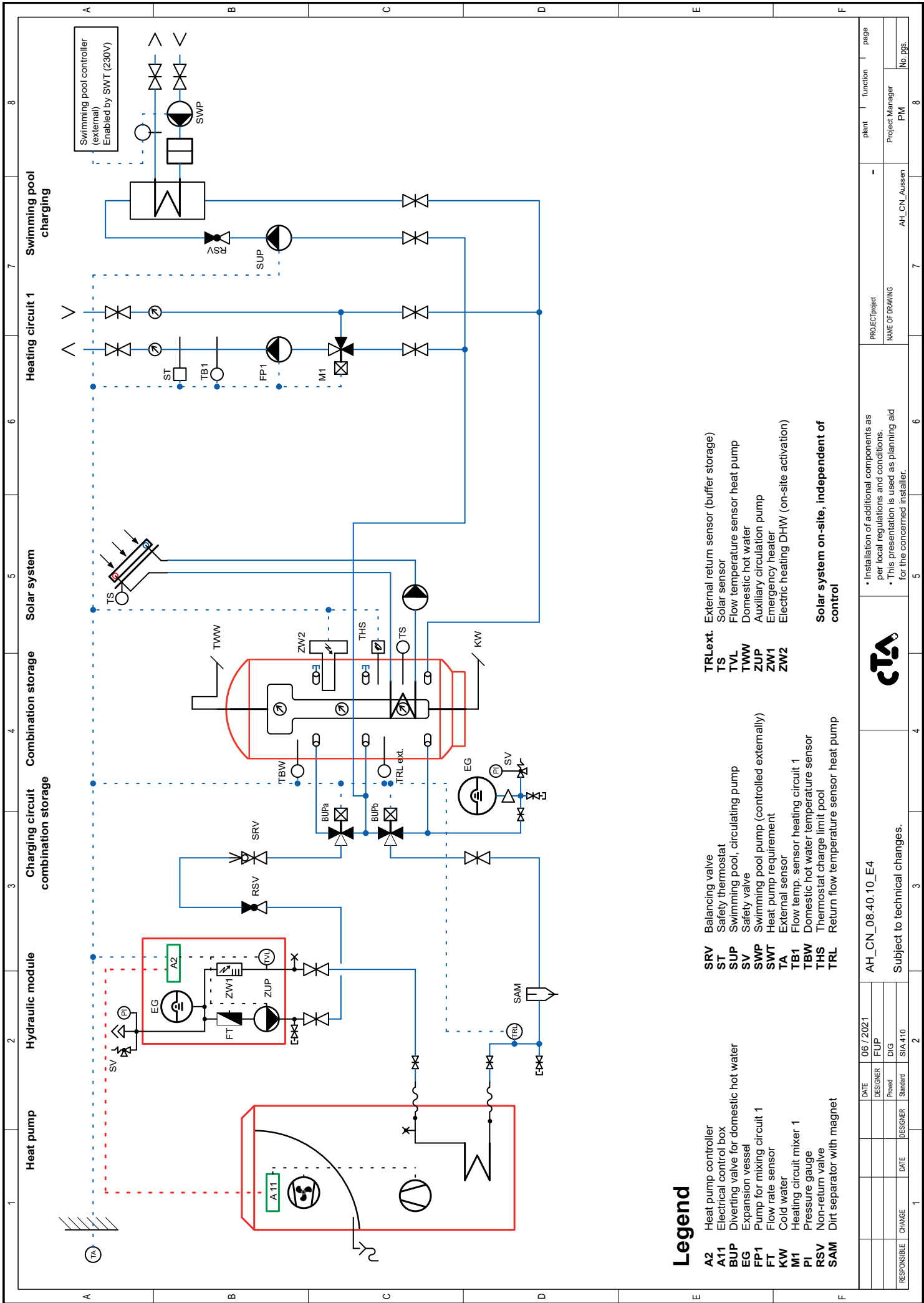


Legend

- | | | | |
|------------|--|------------|---|
| A2 | Heat pump controller | TWW | Domestic hot water |
| A11 | Electrical control box | ZUP | Auxiliary circulation pump |
| BUP | Diverting valve for domestic hot water | ZW1 | Emergency heater |
| EG | Expansion vessel | ZW2 | Electric heating DHW (on-site activation) |
| FP1 | Pump for mixing circuit 1 | | |
| FT | Flow rate sensor | | |
| KW | Cold water | | |
| M1 | Heating circuit mixer 1 | | |
| PI | Pressure gauge | | |
| RSV | Non-return valve | | |
| SAM | Dirt separator with magnet | | |
- Solar system on-site, independent of control**

AH_CN_08.40.10		PROJECT/Project		plant		function		page	
Subject to technical changes.		NAME OF DRAWING		AH_CN_Aussen		Project Manager		PM	
								No. pgs.	
								8	





Legend

- | | | | | | |
|------------|--|------------|--|----------------|---|
| A2 | Heat pump controller | SRV | Balancing valve | TRLExt. | External return sensor (buffer storage) |
| A11 | Electrical control box | ST | Safety thermostat | TS | Solar sensor |
| BUP | Diverting valve for domestic hot water | SUP | Swimming pool, circulating pump | TVL | Flow temperature sensor heat pump |
| EG | Expansion vessel | SV | Safety valve | TWW | Domestic hot water |
| FP1 | Pump for mixing circuit 1 | SWP | Swimming pool pump (controlled externally) | ZUP | Auxiliary circulation pump |
| FT | Flow rate sensor | SWT | Heat pump requirement | ZW1 | Emergency heater |
| KW | Cold water | TA | External sensor | ZW2 | Electric heating DHW (on-site activation) |
| M1 | Heating circuit mixer 1 | TB1 | Flow temp. sensor heating circuit 1 | | |
| PI | Pressure gauge | TBW | Domestic hot water temperature sensor | | |
| RSV | Non-return valve | THS | Thermostat charge limit pool | | |
| SAM | Dirt separator with magnet | TRL | Return flow temperature sensor heat pump | | |

Solar system on-site, independent of control

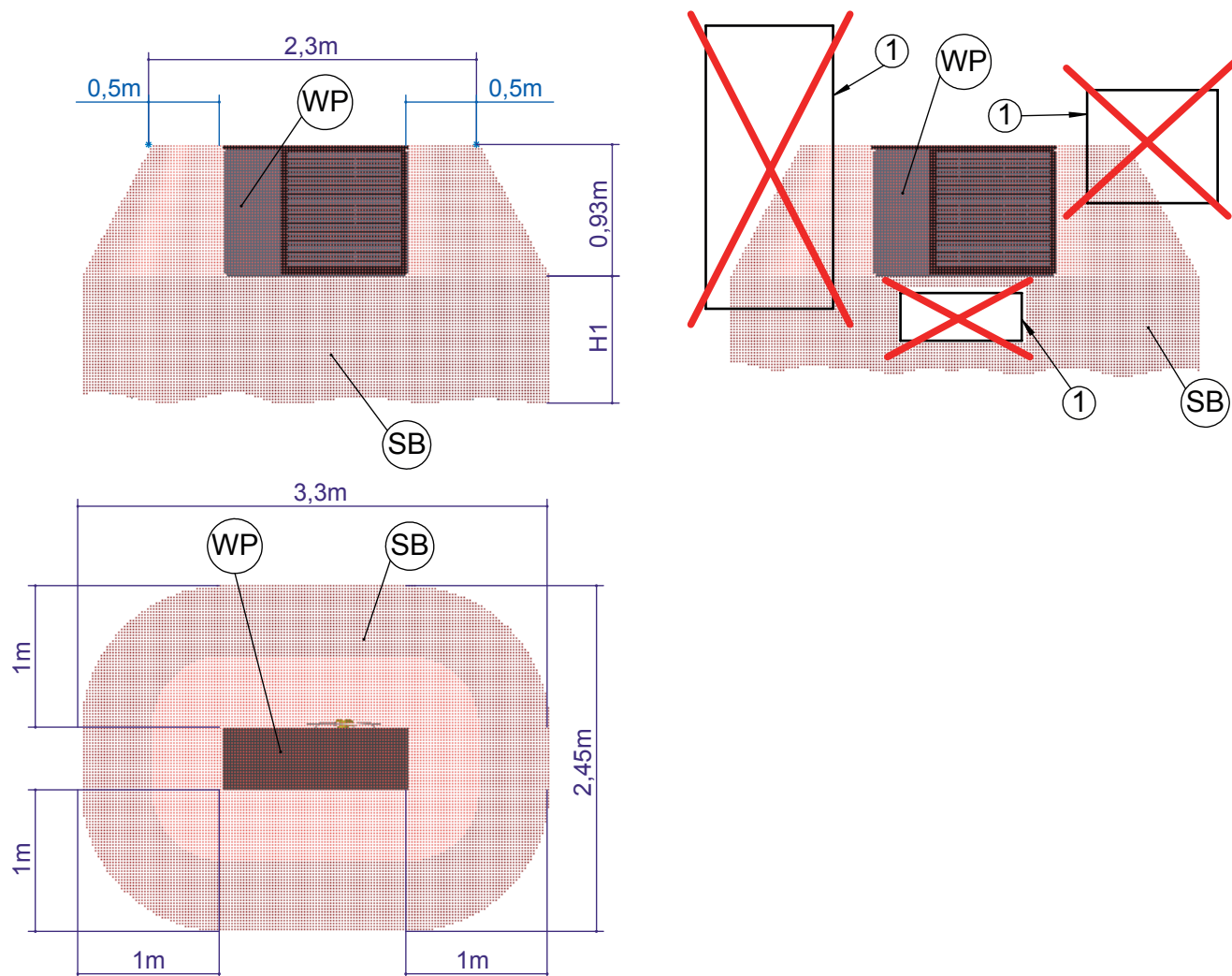
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No. of drawing		7		8		8	



Installation plans

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Installation protected zones AH CN 5a, CN 7a and CN 9a



Legend

- H1 to the floor
- SB protection area
- WP heat pump
- 1 doors, windows, light wells, etc. into the building

Installation of heat pump protection area

Important: The heat pump may only be installed outdoors!

The unit must be positioned so that in case of a leak the refrigerant cannot get into the building or put people at risk in any other way.

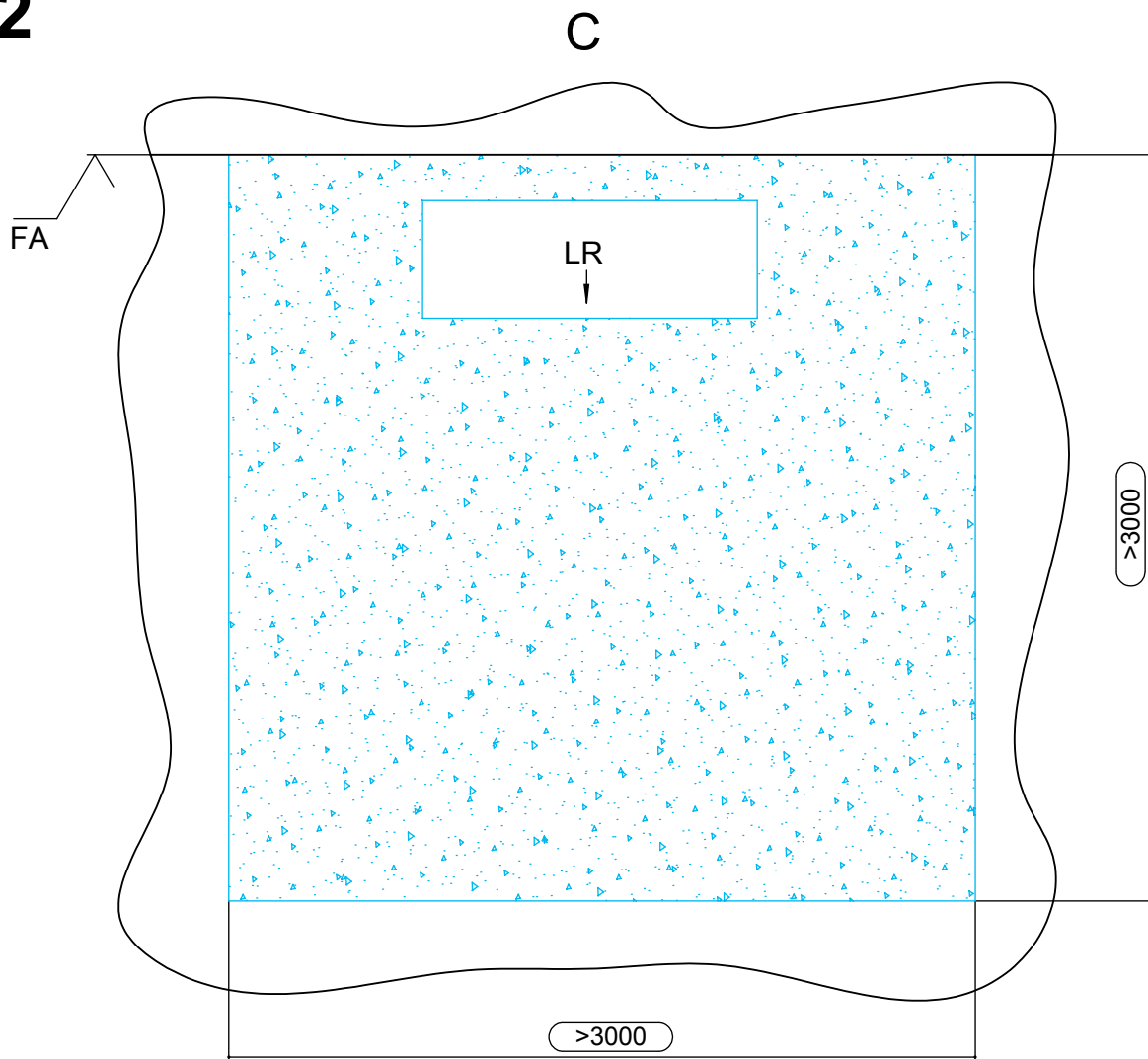
In the protection area (see figure), which is located between the top edge of the unit and the floor, there must be no ignition sources, windows, doors, ventilation openings, light wells and similar. The protection area may not extend onto adjacent properties or public traffic areas. The wall penetration through the building envelope must be made gas-tight.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Minimum clearances

FW2



Legend

FW2 Functionally necessary minimum spacings

C Plan view

FA Finished outer façade

LR Air direction

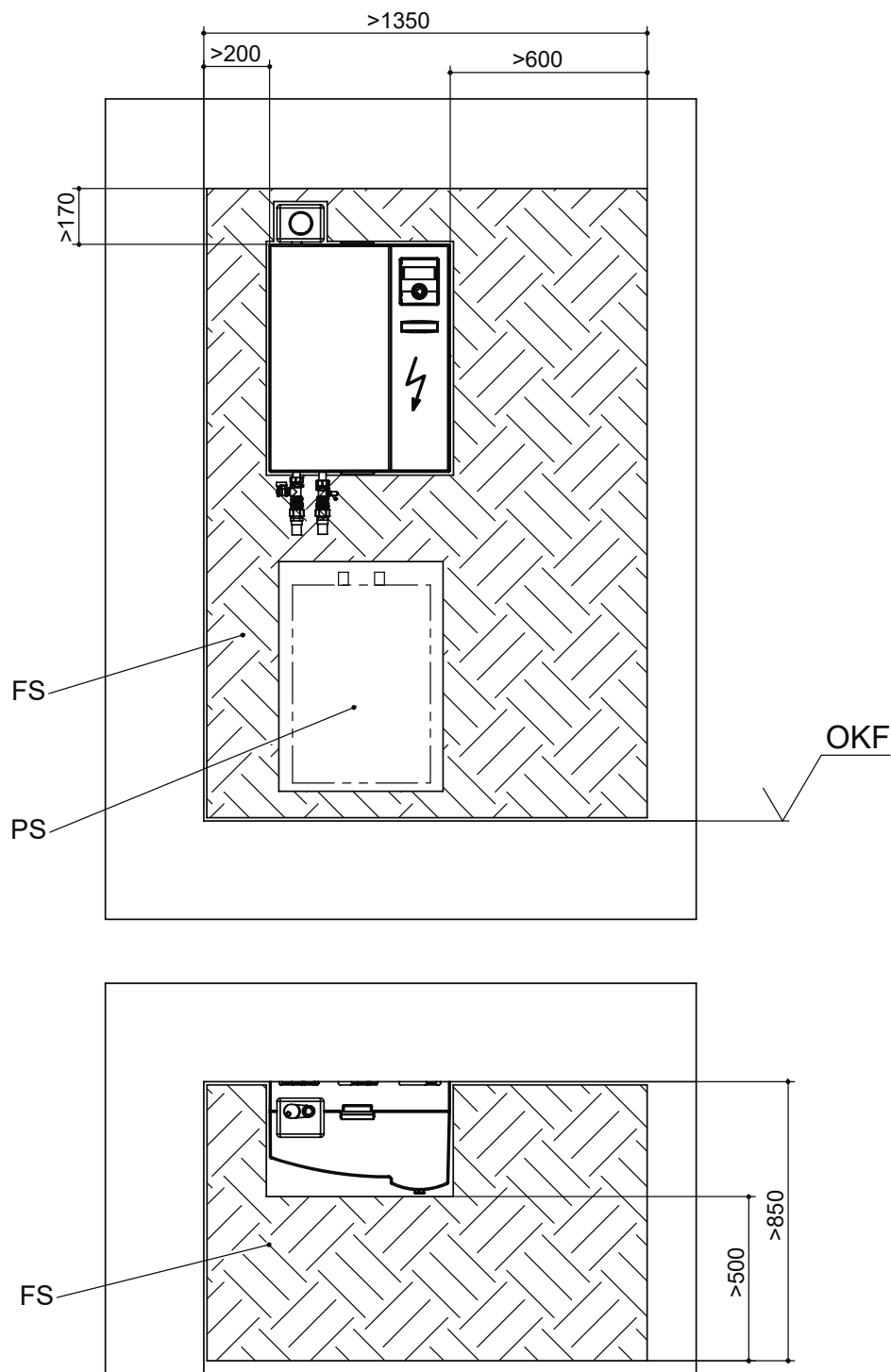
> Minimum clearances

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Minimum distances hydraulic module



Keys

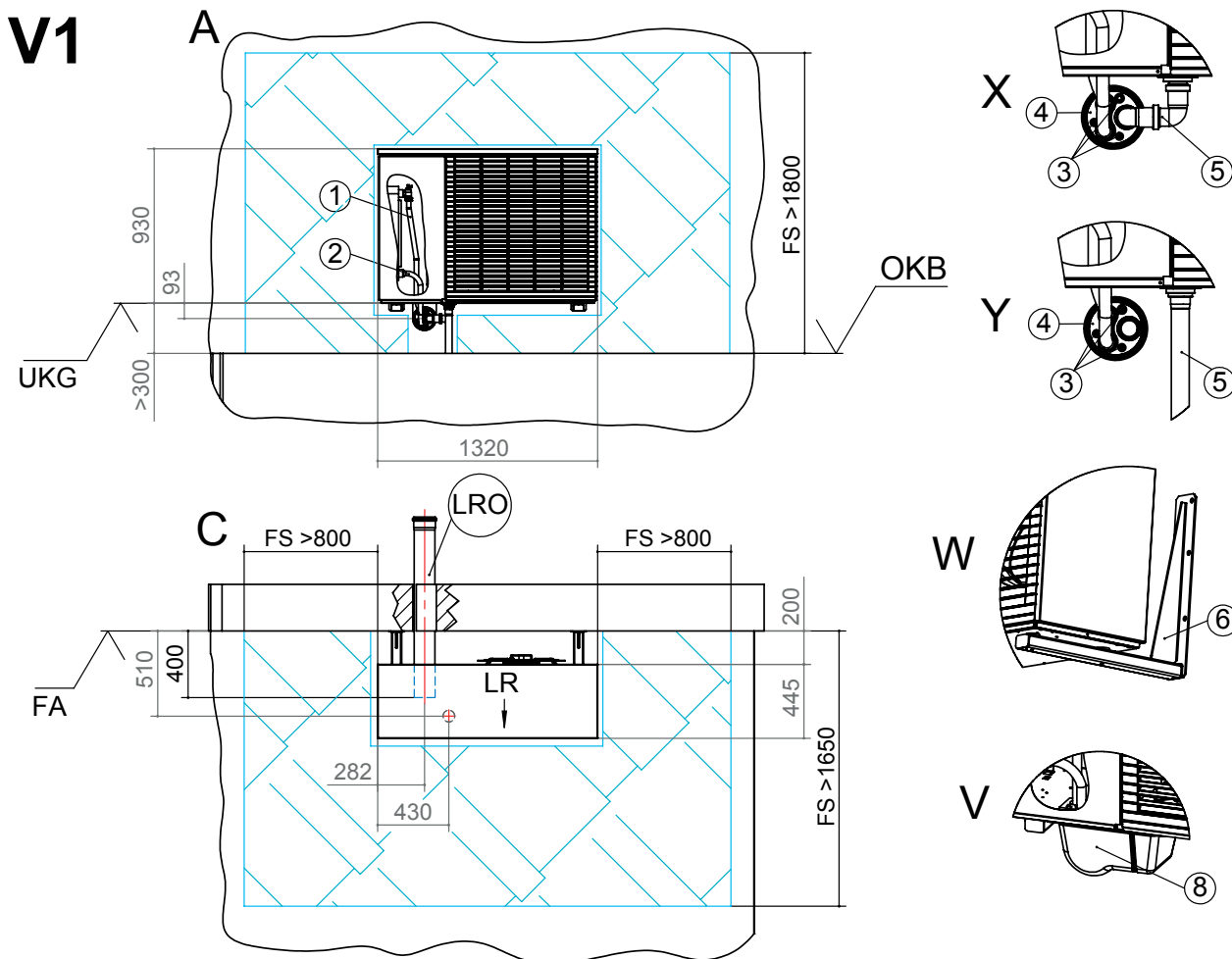
- OKF Top edge finished floor
- FS Free space for service purposes
- PS Free space for wall-mounted buffer storage tank 60 liters (accessory) possible

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Wall bracket with wall duct



Legend

- V1 Variant 1
- A Front view
- C Plan view
- V Detail view of panelling
- W Detail view of wall mounting
- X Detail view of condensate pipe inside the building
- Y Detail view of condensate pipe outside the building
- FA Finished outer façade
- FS Free space for service purposes
- LR Air direction
- LRO Reserve conduit KG DN125, Øa 125, shorten on site
- OKB Floor level
- UKG Bottom edge of unit

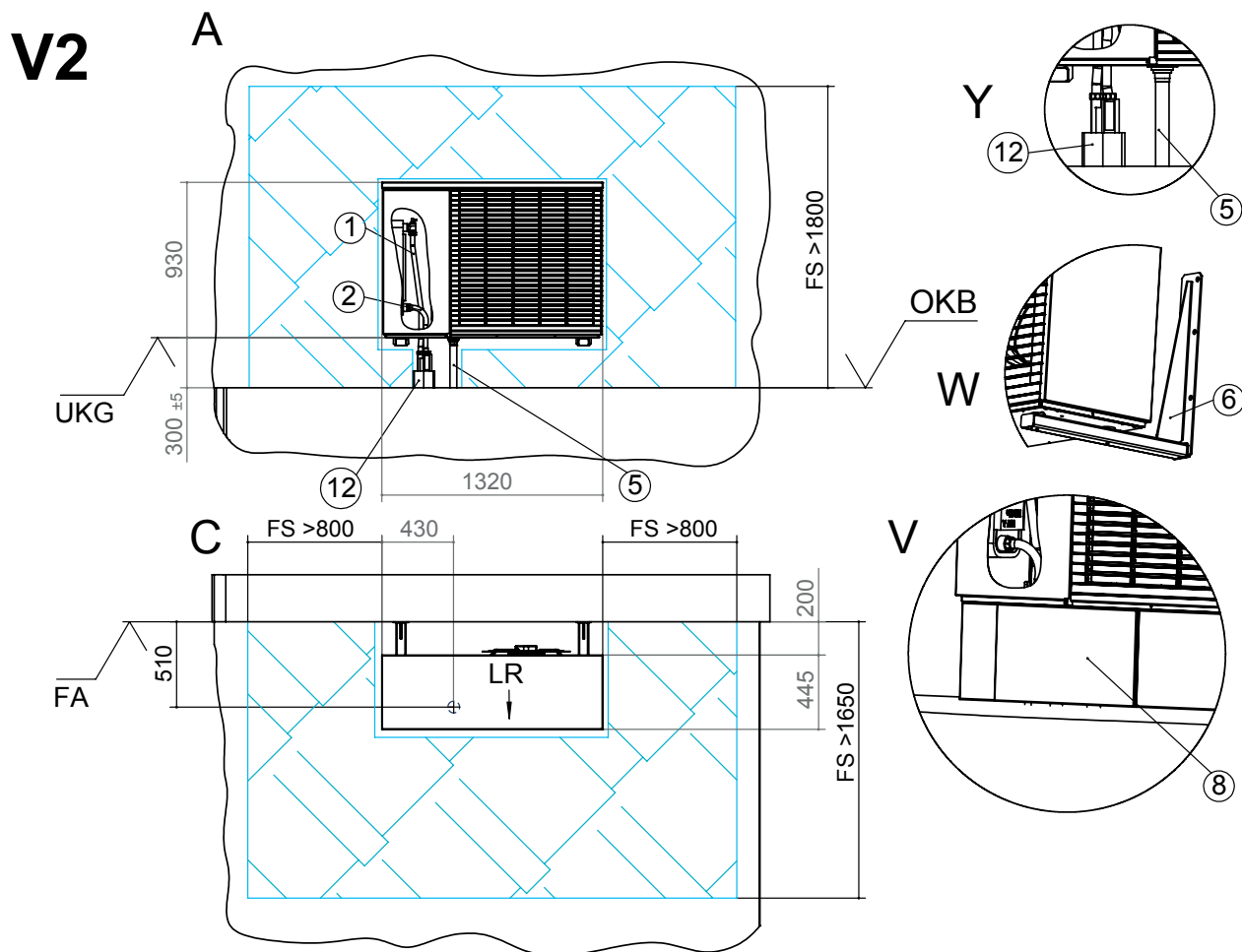
- 1 Heating water feed (accessory)
- 2 Heating water return (accessory)
- 3 Cable feedthrough
- 4 Wall feedthrough (accessory)
- 5 Condensate drain / siphon (→ "Outside / inside connection of condensate pipe", from page 49)
- 6 Bracket for wall mounting (accessory)
- 8 Wall feedthrough panelling (accessory)

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Floor bracket with wall duct



Legend

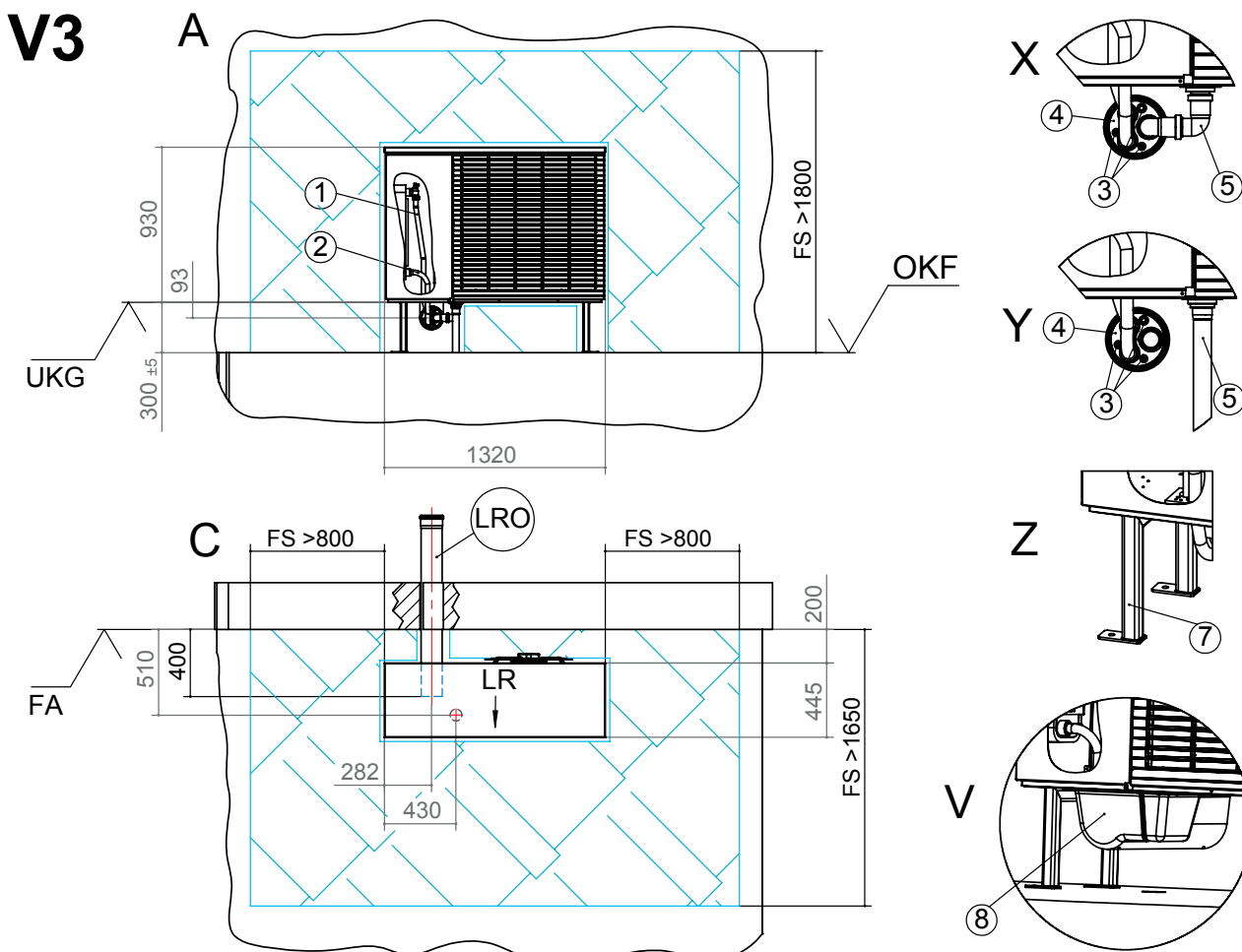
- V2 Variant 2
 - A Front view
 - C Plan view
 - V Detail view of panelling
 - W Detail view of wall mounting
 - Y Detail view of condensate pipe outside the building
 - FA Finished outer façade
 - FS Free space for service purposes
 - LR Air direction
 - OKB Floor level
 - UKG Bottom edge of unit
-
- 1 Heating water feed (accessory)
 - 2 Heating water return (accessory)
 - 5 Condensate drain / siphon (→ "Outside / inside connection of condensate pipe", from page 49)
 - 6 Bracket for wall mounting (accessory)
 - 8 Wall feedthrough panelling (accessory)
 - 12 Hydraulic connection pipe

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Wall bracket with hydraulic connection pipe



Legend

- V3 Variant 3
- A Front view
- C Plan view
- V Detail view of panelling
- X Detail view of condensate pipe inside the building
- Y Detail view of condensate pipe outside the building
- Z Detail view of floor mounting
- FA Finished outer façade
- FS Free space for service purposes
- LR Air direction
- LRO Reserve conduit KG DN125, Øa 125, shorten on site
- OKF Top edge of foundation
- UKG Bottom edge of unit

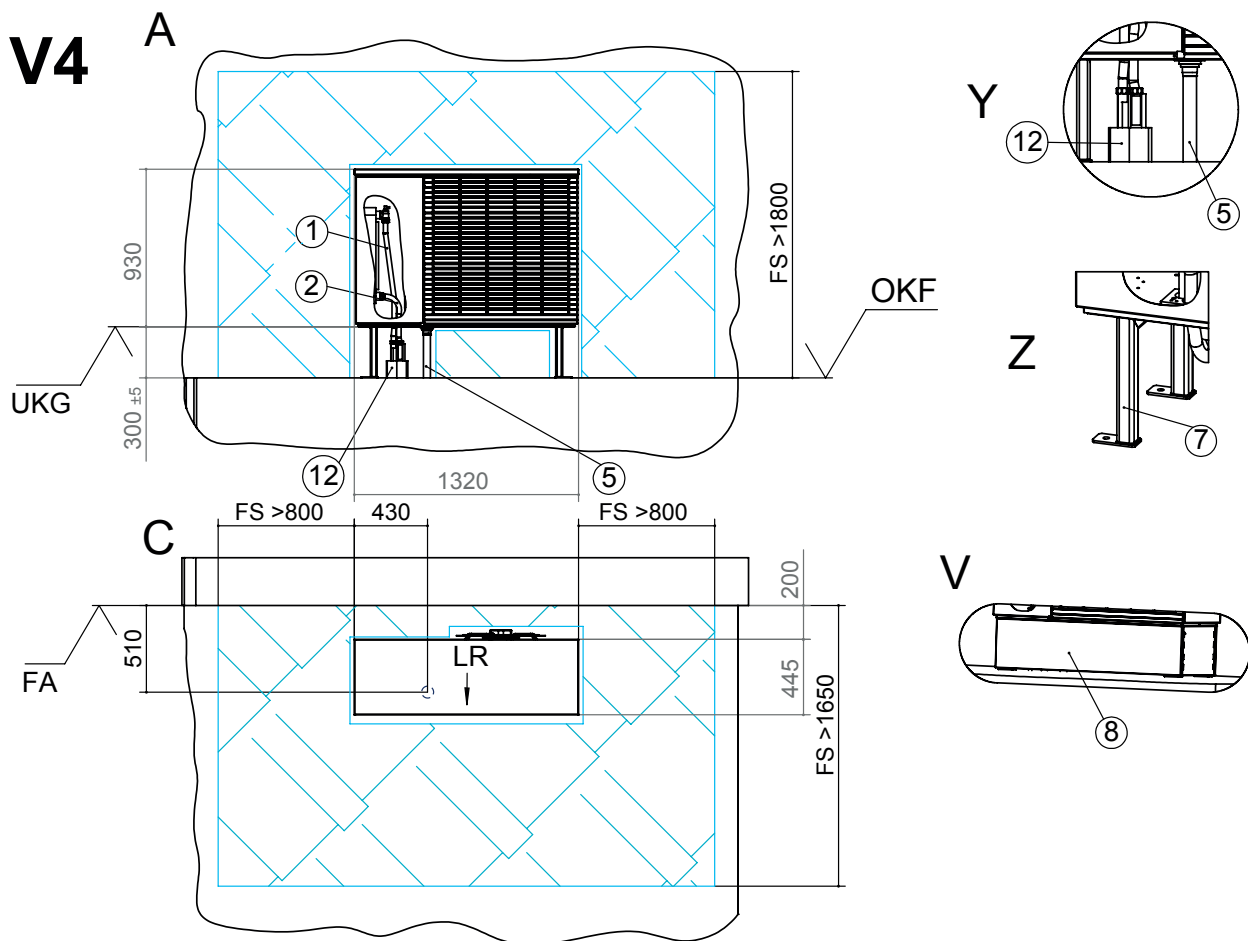
- 1 Heating water feed (accessory)
- 2 Heating water return (accessory)
- 3 Cable feedthrough
- 4 Wall feedthrough (accessory)
- 5 Condensate drain / siphon (→ "Outside / inside connection of condensate pipe", from page 49)
- 6 Bracket for floor mounting (accessory)
- 7 Bracket for floor mounting (accessory)
- 8 Wall feedthrough panelling (accessory)

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Floor bracket with hydraulic connection pipe



Legend

- V4 Variant 4
 - A Front view
 - C Plan view
 - V Detail view of panelling
 - Y Detail view of condensate pipe outside the building
 - Z Detail view of floor mounting
 - FA Finished outer façade
 - FS Free space for service purposes
 - LR Air direction
 - OKF Top edge of foundation
 - UKG Bottom edge of unit
-
- 1 Heating water feed (accessory)
 - 2 Heating water return (accessory)
 - 5 Condensate drain / siphon (→ "Outside / inside connection of condensate pipe", from page 49)
 - 7 Bracket for floor mounting (accessory)
 - 8 Floor bracket panelling (accessory)
 - 12 Hydraulic connection pipe

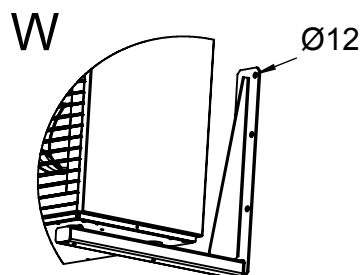
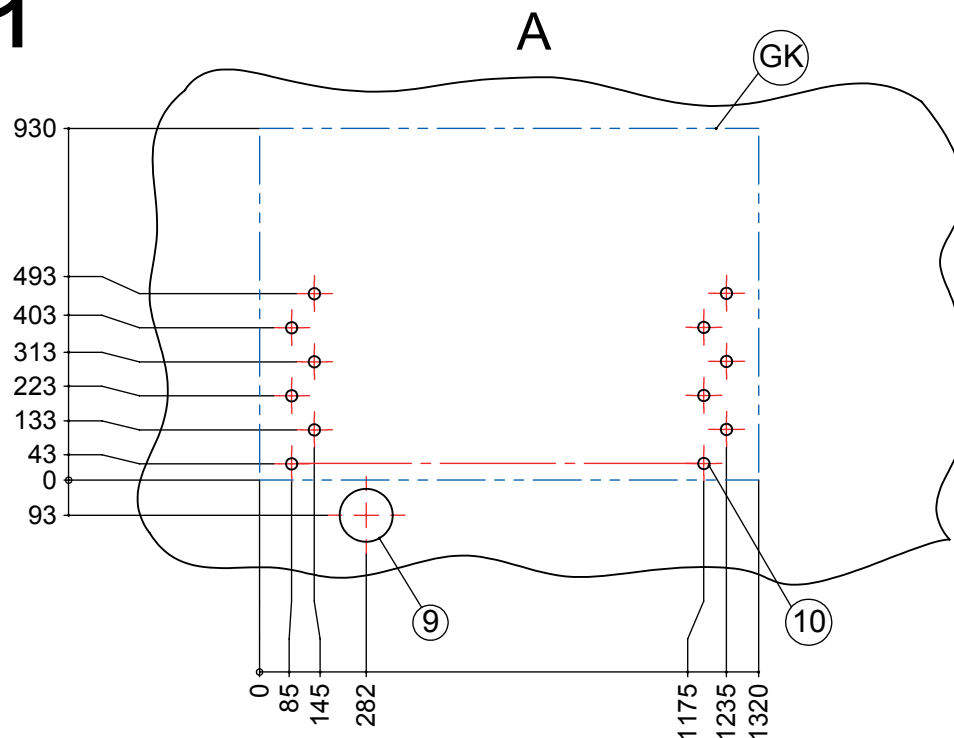
All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Drilling pattern for wall bracket wall feedthrough

BB1



Legend

BB1 Drilling pattern for wall bracket (accessory) on mounting wall for V1

A Front view

W Detail view of wall mounting

GK Unit contour

9 Hole for reserve conduit KG DN125, Øa 125

10 Fixing holes for wall brackets

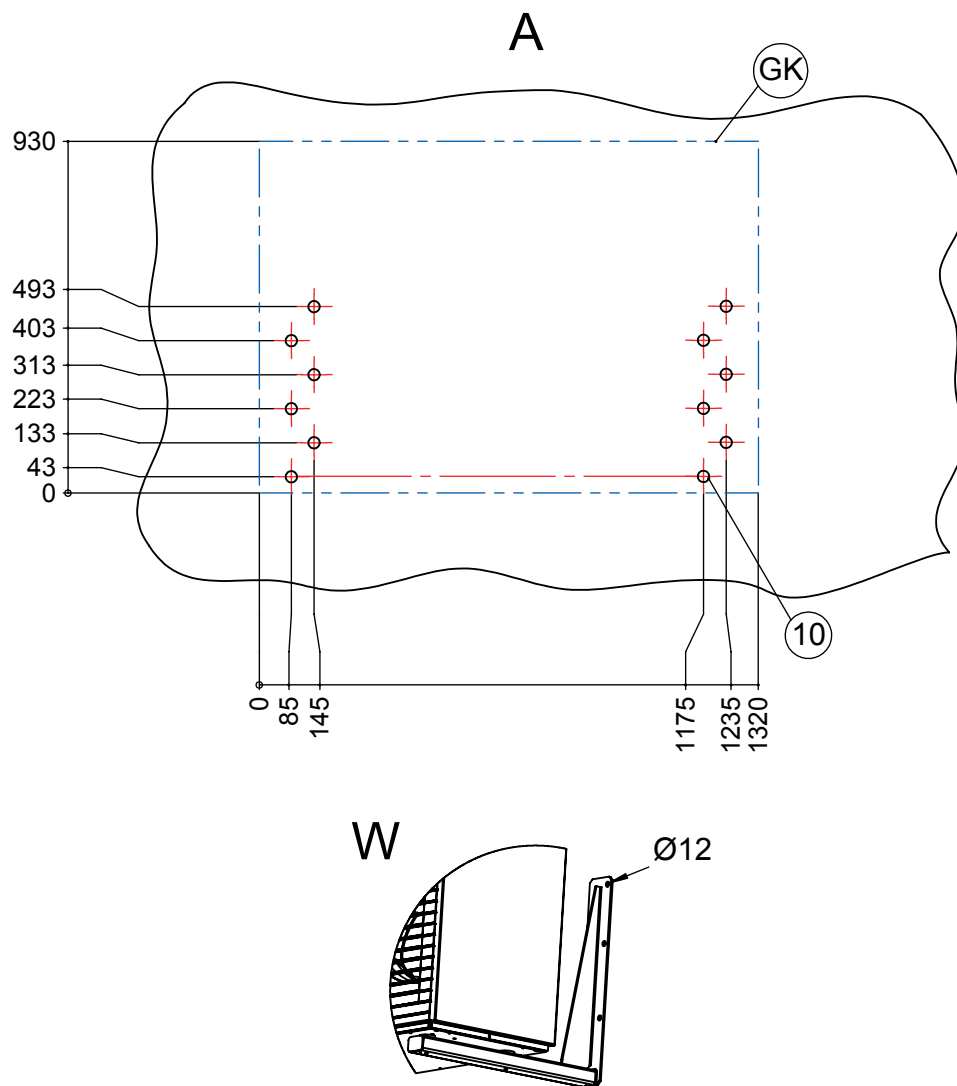
All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Drilling pattern for wall bracket hydraulic connection pipe

BB2



Legend

BB2 Drilling pattern for wall bracket (accessory) on mounting wall for V2

A Front view

W Detail view of wall mounting

GK Unit contour

10 Fixing holes for wall brackets

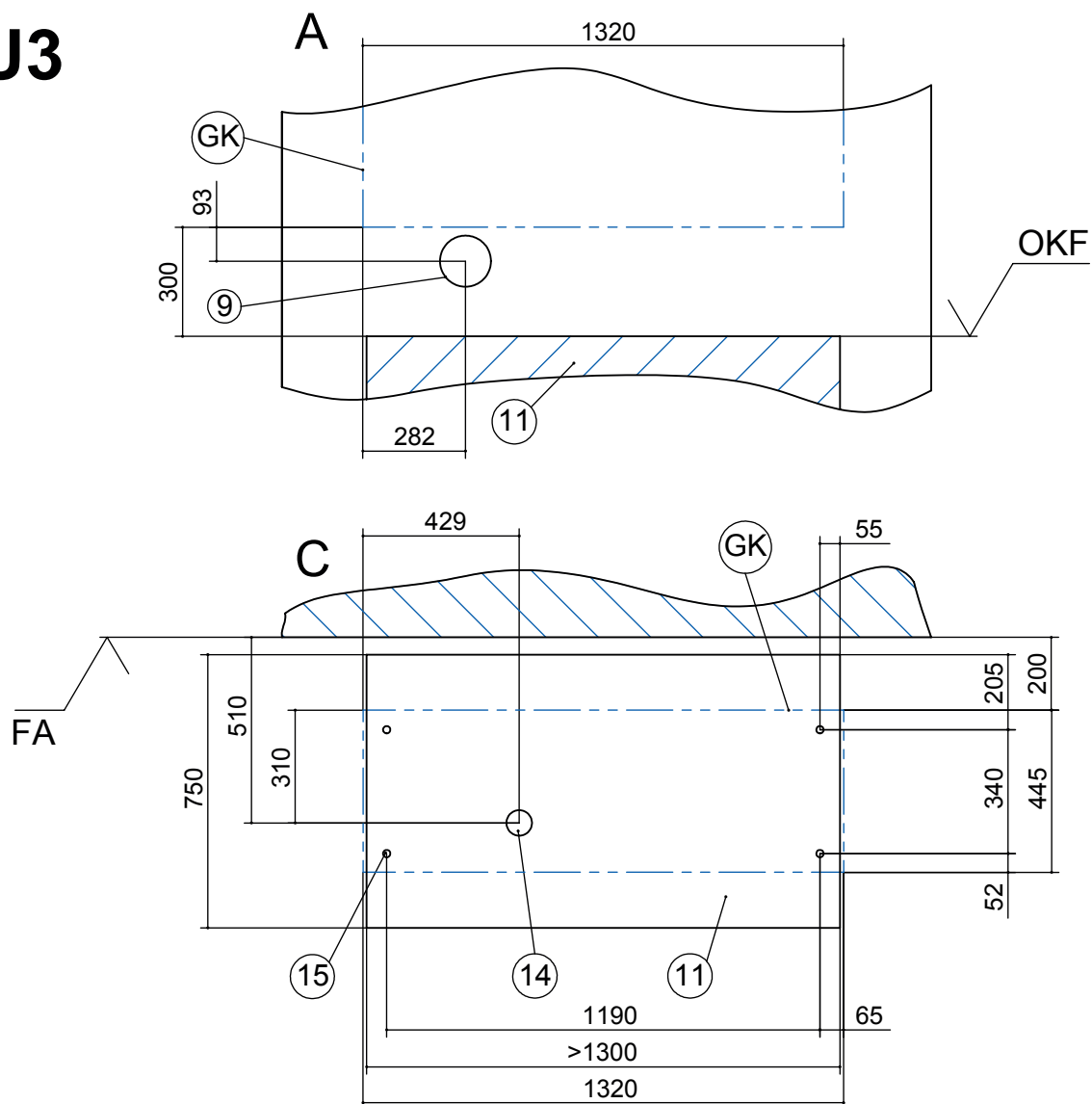
All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

View of foundation V3 with wall feedthrough

FU3



Legend

- FU3 View of foundation for V3
- A Front view
- C Plan view
- FA Finished outer façade
- GK Unit contour
- OKF Top edge of foundation

- 9 Hole for reserve conduit KG DN125, Øa 125
- 11 Foundation
- 14 Condensate drain pipe min. Ø50
- 15 Fixing holes for floor bracket

The foundation must have no structure-borne sound contact with the building.

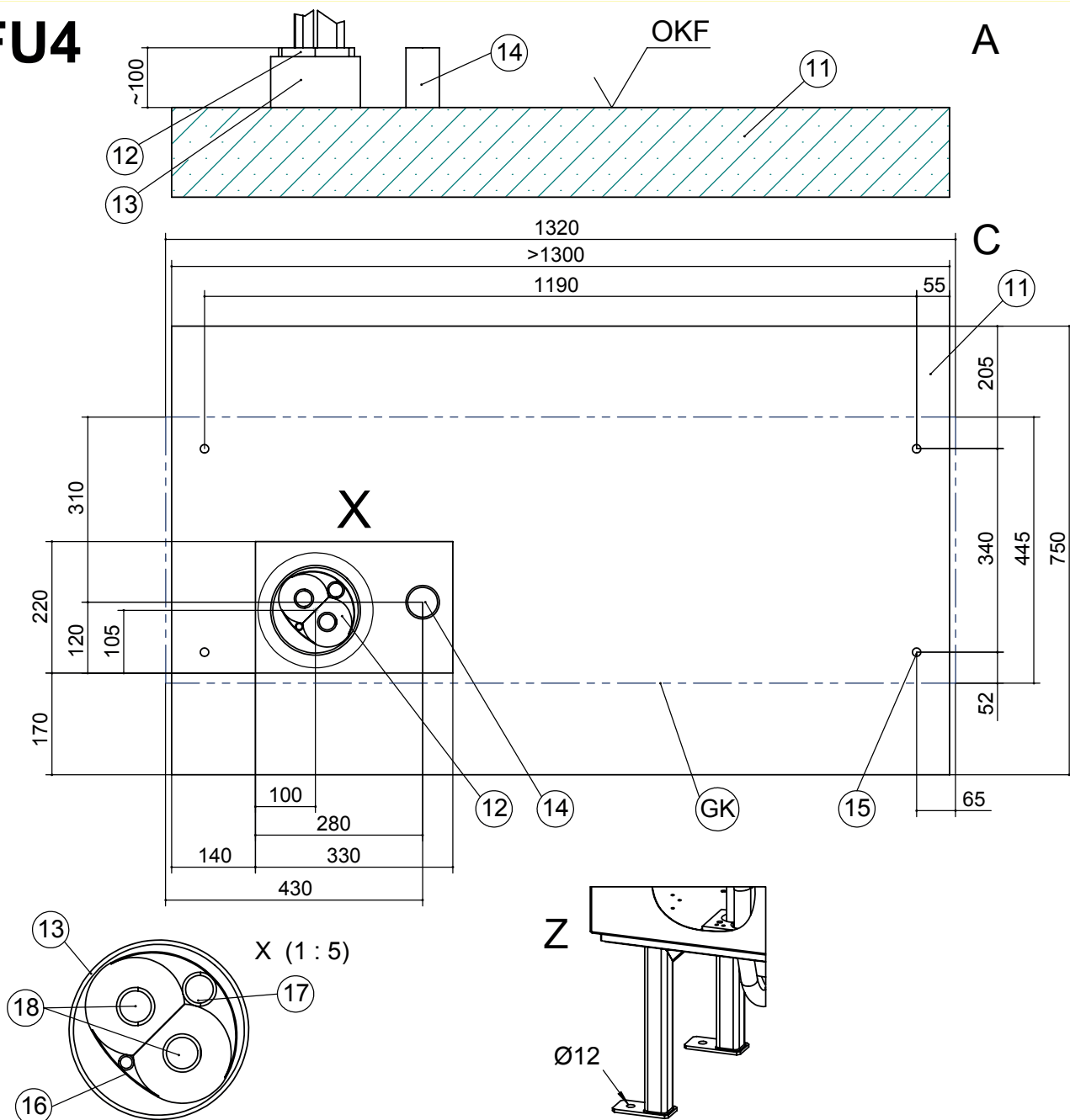
All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

View of foundation V4 with hydraulic connection pipe

FU4



Legend

FU4 View of foundation for V4

A Front view

C Plan view

X Detail view X

Z Detail view of floor mounting

GK Unit contour

OKF Top edge of foundation

13 Reserve conduit DN150 (on site)

14 Condensate drain pipe min. Ø50

15 Fixing holes for floor bracket

16 Reserve conduit for bus cable

17 Reserve conduit for electric cable

18 Heating water feed and return pipe

The foundation must have no structure-borne sound contact with the building.

11 Foundation

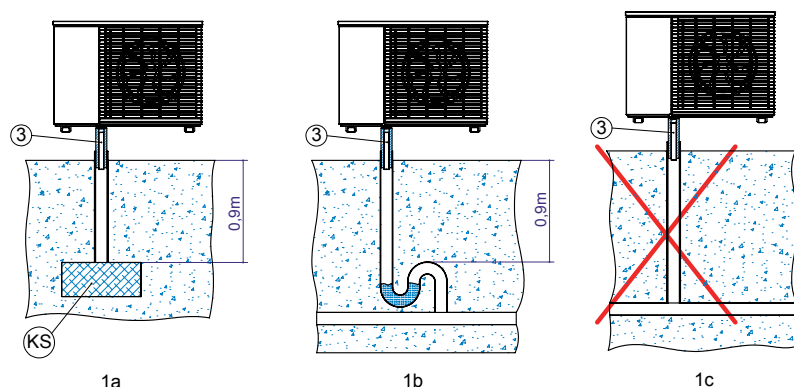
12 Hydraulic connection pipe

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

External condensate line connection



Legend

- KS Gravel layer for absorbing up to 50 litres condensation water per day as buffer zone for percolating.
 3 Condensate drain pipe DN40

Installation instructions for connecting the condensate pipe outside the building

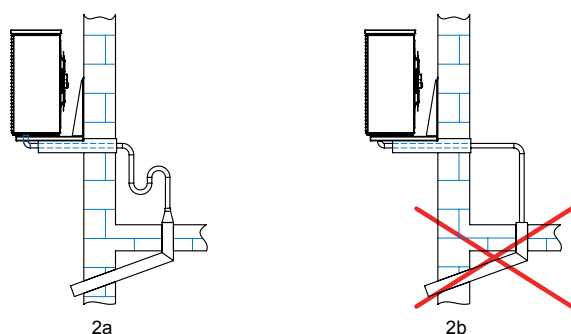
Important: If the condensation water is discharged directly into the ground (figure 1a). The condensate drain pipe (3) must be insulated between the ground and the heat pump.

Important: If the condensation water is discharged directly into a wastewater or rainwater pipe a syphon must be used (figure 1b).

A plastic pipe, laid vertically and insulated above the ground, must be used. Further, do not install any non-return valves or similar in the drain pipe. The condensate drain pipe must be connected so that the condensate can flow freely into the main pipe. If the condensate is discharged into filter drains or the sewers, ensure the pipes are laid with a gradient.

In all cases (figure 1a and figure 1b) ensure that the condensation water is discharged in a frost-free zone.

Internal condensate line connection



Installation instructions for connecting the condensate pipe inside the building

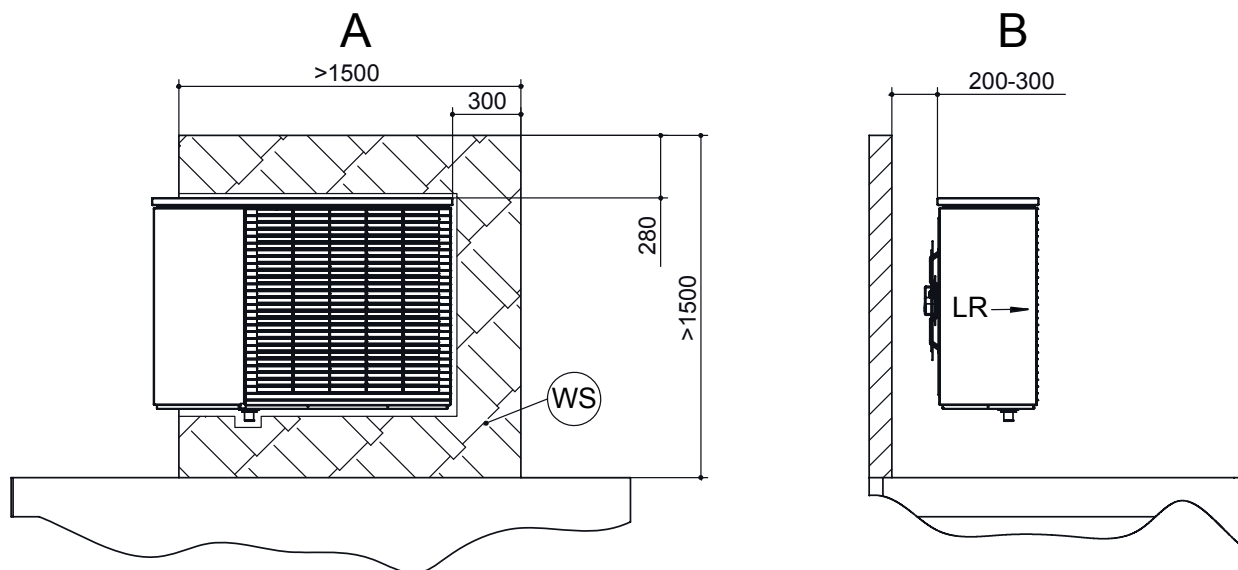
Important: When connecting the condensate pipe inside the building, a syphon must be installed, which is connected gas-tight to the drain pipe (see figure 2a).

Do not connect any additional drain pipes to the condensate drain pipe of the heat pump. The drain pipe must be free in the direction of the sewer. I.e. ensure that downstream of the heat pump connection pipe there are no non-return valves or syphons.

In all cases (figure 2a) it must be ensured that the condensation water is discharged in a frost-free zone.

Installation plan Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Free field installation



Free field installation only allowed with wind shield.

Legend

- A Front view
- B Side view from the left
- WS Wind shield, functionally necessary spacings for heat pump
- LR Air direction

All dimensions in mm.

Installation plan

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

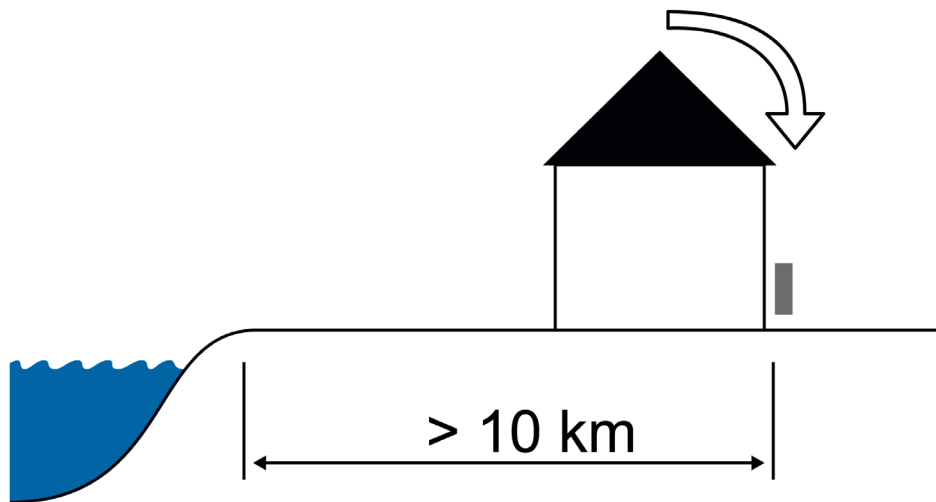
Coastal installation

IMPORTANT

The minimum distances necessary for correct and safe operation as well as any service work must be observed.

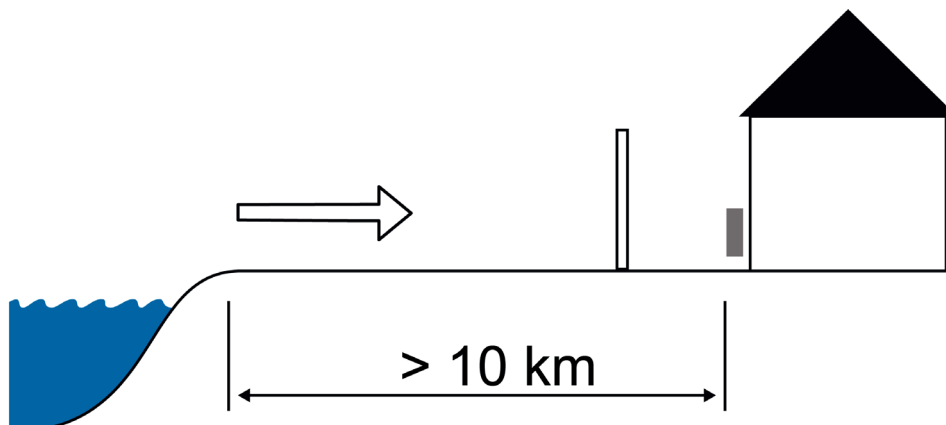
- **facing away from the coast / prevailing wind direction**

- in a sheltered area near a wall
- not in open areas
- not in sandy surroundings (to avoid the influx of sand)



- **on the seaward side**

- in an area near a wall
- an impermeable windbreak resistant to onshore winds is installed
- height and width of the windbreak $\geq 150 \%$ of the device dimensions
- not in sandy surroundings (to avoid the influx of sand)

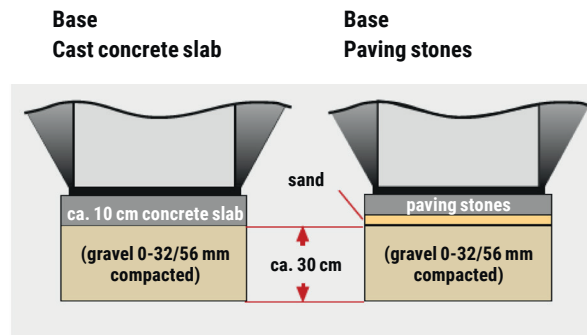


Installation instructions

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Ground

- The heat pump must be standing on a permanently fixed even and level surface. Installation on a cast concrete slab or on paving stones that are laid on a frost protection layer is recommended.
- The heat pump must be placed completely and level on the base.
- To avoid sound bridges, the heat pump base must be attached over the whole contour.
- The ground of the installation place must be permanently fixed.

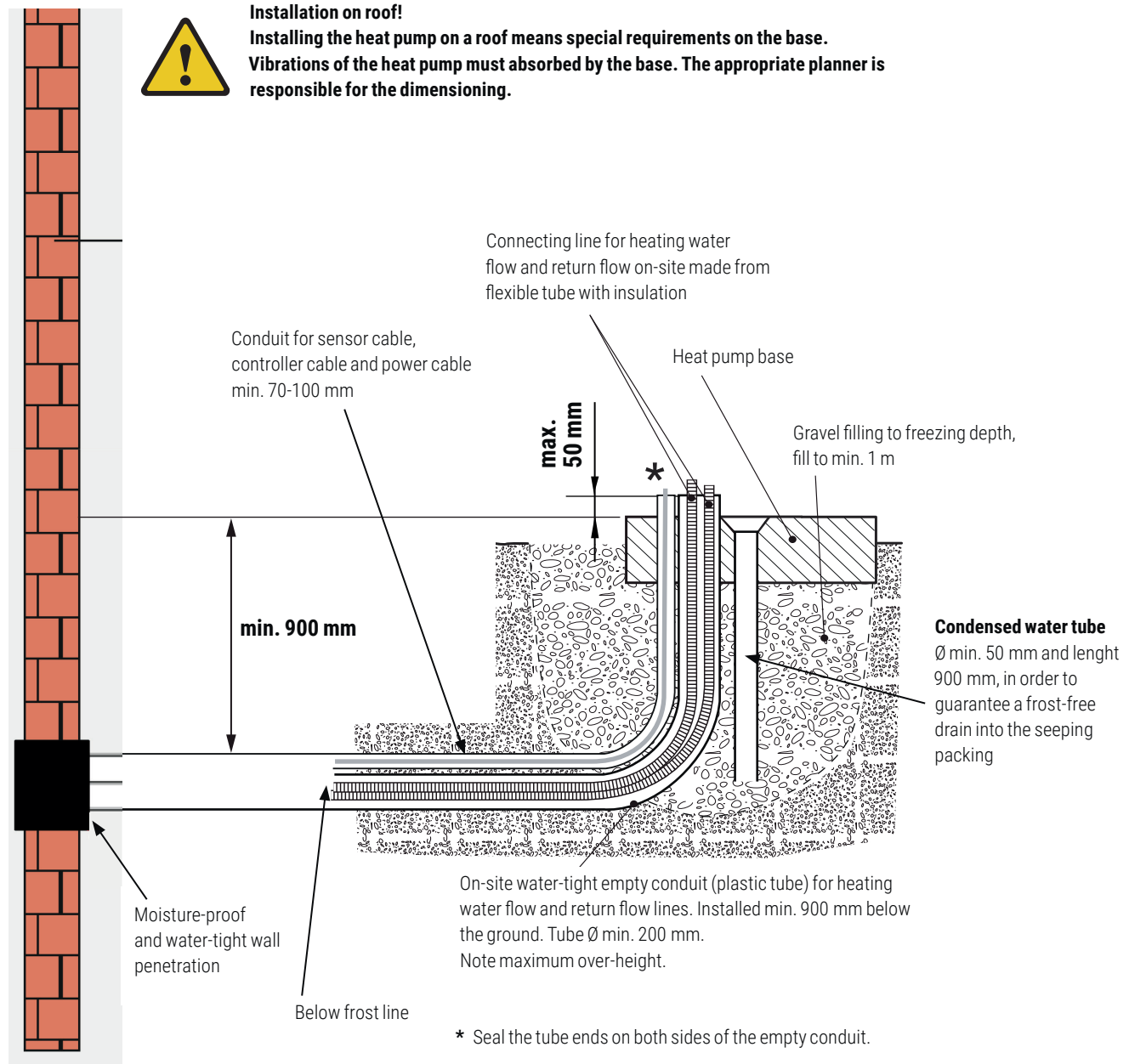


Attention! The paving stones must be suitable for the weight of the respective unit.



Installation on roof!

Installing the heat pump on a roof means special requirements on the base. Vibrations of the heat pump must be absorbed by the base. The appropriate planner is responsible for the dimensioning.



Installation instructions

Aeroheat AH CN 5a, CN 7a and CN 9a, outdoor unit

Sound Aeroheat heat pumps

All CTA heat pumps are dimensioned for an exceptionally low noise operation. Despite this, the installation location of the heat pumps and the distance to neighbouring buildings must be selected in such a manner that individual perceptions are considered.

With regard to noise pollution, the following points should be observed:

- Installing the heat pumps directly on or underneath windows should be avoided.
- Installation in niches, corners of walls or between two walls has an effect of increasing the noise level by reflection and is therefore not recommended.
- Free spaces around the heat pump base leads to sound bridges with an increase in the sound level.
- Do not install the heat pump directly on neighbouring buildings.

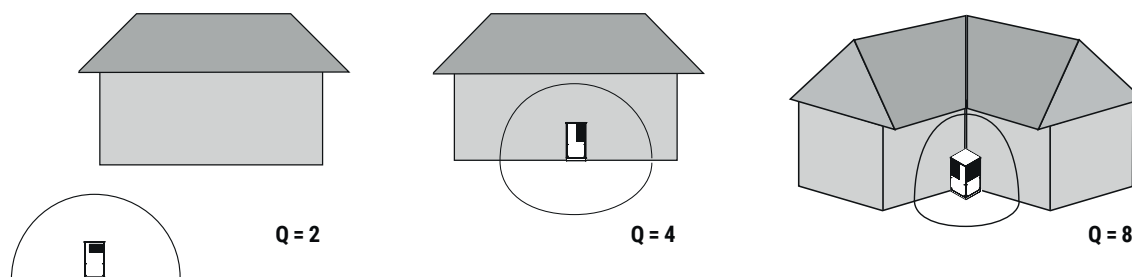


Note

Other constellations, adjoining other buildings or even reflecting surfaces may lead to a level increase. An exact specification of each sound pressure level is possible only through a measurement spot when the heat pumps is already installed.

The sound pressure levels for the respective installation situation can be calculated using the Cercle Bruit Switzerland form «Lärmschutz-nachweis für Luft/Wasser-Wärmepumpen» (noise protection certificate for air/water heat pumps).

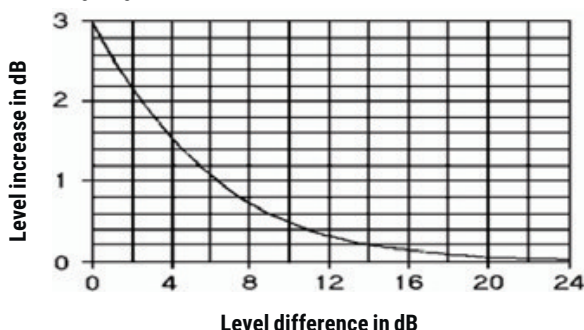
The directivity factor Q for the different installation variants:



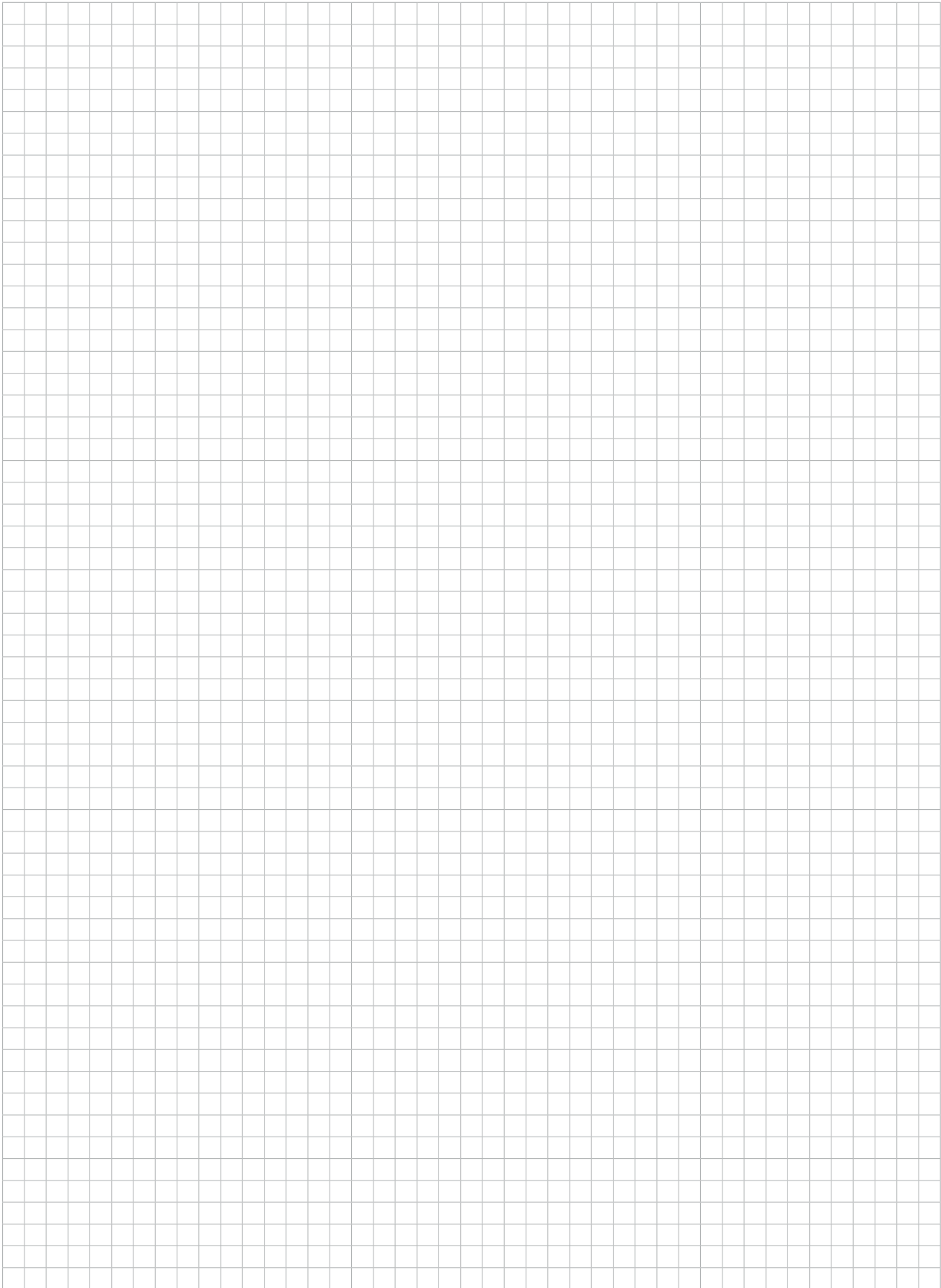
In case of 2 or more units of the same heat pump type, the respective level increase must be added to the corresponding sound pressure level from the following table:

Number of n equally loud sound sources	Level increase ΔL in dB
1	0.0
2	3.0
3	4.8
4	6.0
5	7.0
6	7.8
7	8.5
8	9.0
9	9.5
10	10.0
12	10.8

In case of different, not equally loud units, the level increase is read off the following diagram:



Example: If the level difference between two unequal sound sources is 5 dB, the level increase is an additional 1,2 dB.





CTA Ltd.

Hunzigenstrasse 2
CH-3110 Münsingen, Switzerland
www.cta.ch