



Daikin Altherma mid  
temperature split  
Technical Data  
ELVZ-E6V /  
ELVZ-E9W





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# 1 Features

1 - 1 ELVZ-E6V, ELVZ-E9W

## Floor standing unit integrated with different temperature zones management

1

- › A combined stainless steel domestic hot water tank of 180 or 230L and heat pump for easy installation
- › Bi-zone allows temperature monitoring for 2 zones. Connect underfloor heating to radiators to optimise efficiency
- › Quick configuration in 9 steps in a high resolution colour interface wizard
- › Inclusion of all hydraulic components means no third party components are required
- › The unit's sleek design blends in with other household appliances.



Onecta app

## 2 Specifications

### 2 - 1 Specifications

Technical specifications				ELVZ12S23E6V		ELVZ12S18E6V		
Heater capacity	Step1		kW			2		
	Step2		kW			2 or 4		
Casing	Colour			White + Black				
	Material			Precoated sheet metal				
Dimensions	Unit	Height	mm	1,855		1,655		
		Width	mm			595		
		Depth	mm			634		
	Packed unit	Height	mm	2,020		1,820		
		Width	mm			720		
		Depth	mm			740		
Weight	Unit		kg	141		133		
	Packed unit		kg	160		152		
Packing	Material			Wood / Carton / Metal / PE wrapping foil				
	Weight			19				
PED	Category			Category II				
	Most critical part	Name	Ps*V			Bar*l		
						Plate heat exchanger		
Refrigerant side heat exchanger	Type			Plate heat exchanger				
	Quantity			1				
	Plates	Quantity			66			
Pump	Type			Grundfos UPM4L K 15-75 130 9 DKI				
	Nr of speeds			PWM				
	Power input			75				
Pump Additional Zone	Nr of speeds			PWM				
	Power input			75				
	Type			UPM4L K 15-75 1309 DKI				
Pump Main Zone	Nr of speeds			PWM				
	Power input			75				
	Type			UPM4L K 15-75 1309 DKI				
Water side Heat exchanger	Type			Plate heat exchanger				
	Model			ACH43-66AH-F				
	Quantity			1				
	Plates	Quantity			66			
	Water volume			l				
	Water flow rate	Min.		l/min	20.0 (1)			
Expansion vessel	Volume			l				
Expansion vessel	Max. water pressure			bar				
	Pre pressure			bar				
Water Filter Additional Zone	Diameter perforations			mm				
	Material			Plastic / Stainless steel				
Water filter Main Zone	Diameter perforations			mm				
	Material			Copper - brass - stainless steel				
Tank	Name			Stainless steel domestic hot water tank 230 L		Stainless steel domestic hot water tank 180 l		
	Water volume			l		230		
	Material			Stainless steel (DIN 1.4521)				
	Maximum water temperature			°C				
	Maximum water pressure			bar				
	Insulation	Material			Polyurethane foam			
		Heat loss		kWh/24h	1.4 (2)		1.2 (2)	
	Standing heat loss	S		W	58		50	
	Storage volume	V		l	220		181	
	Corrosion protection			Pickling				
Energy efficiency class			B					
General	Supplier/ Manufacturer details	Name or trademark		Daikin Europe N.V.				
		Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium				
3-way valve	Coefficient of flow (kV)	Space heating	m <sup>3</sup> /h	8				
		Domestic hot water tank	m <sup>3</sup> /h	10				
3-way valve mixing	Coefficient of flow (kV)	Bypass	m <sup>3</sup> /h	13				
		Main zone only	m <sup>3</sup> /h	8				
Water circuit	Total water volume			l				
	Minimum water volume in the system for cooling			l				
	Minimum water volume in the system for heating			l				
Water circuit - space heating side (additional zone)	Air purge valve			Yes				
	Drain valve / fill valve			No				
	Manometer			Yes				
	Piping connections diameter			inch				
	Safety valve			bar				
	Shut off valve			Yes				

## 2 Specifications

### 2 - 1 Specifications

2

Technical specifications					ELVZ12S23E6V	ELVZ12S18E6V
Water circuit - space heating side (main zone)	Air purge valve				No	
	Drain valve / fill valve				Yes	
	Manometer				No	
	Piping connections diameter		inch		G 1 (FEMALE)	
	Safety valve		bar		3	
Water circuit - space heating side (main zone)	Shut off valve				Yes	
	Piping material				Cu	
Water circuit - Domestic hot water side	Piping connections	Cold water in / Hot water out	inch		G 3/4" FEMALE	
		Recirculation connection	inch		G 3/4" FEMALE	
	Gas side diameter		mm		15.9	
Refrigerant circuit	Liquid side diameter		mm		6.35	
	Nom.		dBA		44.0 (4)	
Sound power level	Nom.		dBA		30.0 (4)	
	Operation range		Heating	Ambient	Min. °C	-25 (5)
				Max. °C	25 (5)	
			Water side	Min. °C	15 (5)	
				Max. °C	65 (5)	
Indoor installation	Ambient	Min.	°CDB		5	
		Max.	°CDB		35	
Cooling	Ambient	Min.	°CDB		10 (5)	
		Max.	°CDB		43 (5)	
	Water side	Min.	°C		5 (5)	
		Max.	°C		22 (5)	
Domestic hot water	Ambient	Min.	°CDB		-25 (5)	
		Max.	°CDB		35 (5)	
	Water side	Min.	°C		25 (5)	
		Max.	°C		62 (5)	
Safety devices	Item	01			Thermal cut out	

Electrical specifications					ELVZ12S23E6V	ELVZ12S18E6V	
Power supply	Name				See note 7		
	Voltage range	Min.	%		-10		
		Max.	%		10		
IP class	IP				X0		
Electric heater	Power supply	Name			6V3		
		Phase			1~ / 3~		
		Voltage		V		230	
	Current	Maximum running current		A		26.0	
		Zmax	List	Ω		0.22	
		Minimum Ssc value				Equipment complying with EN/IEC 61000-3-12	
	Recommended fuses		A		20.000 (6)		
Wiring connections	Communication cable	Quantity			3+GRD		
		Remark			1.5 mm <sup>2</sup>		
	Electric meter	Quantity			2		
		Remark			Minimum 0.75 mm <sup>2</sup> (SVDC pulse detection)		
	Preferential kWh rate power supply	Quantity			Power: 2		
		Remark			Power 6.3A (Select diameter and type according to national and local regulations)		
	Domestic hot water pump	Quantity			2		
		Remark			Minimum 0.75 mm <sup>2</sup> (2A inrush, 1A continuous)		
	For power supply back-up heater	Quantity			Prewired		
		Remark					
	For connection with R6T	Quantity			2		
		Remark			Minimum 0.75 mm <sup>2</sup>		
	For connection with A3P	Quantity			Depends on thermostat type, cf. installation manual		
Remark				Voltage: 230V / Max. current: 100mA / Min. 0.75mm <sup>2</sup>			
For connection with M2S	Quantity			2			
	Remark			Voltage: 230V / Max. current: 100mA / Min. 0.75mm <sup>2</sup>			
For connection with optional FWXV* (demand input and output)	Quantity			4			
	Remark			100 mA, minimum 0.75 mm <sup>2</sup>			

(1) Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |

## 2 Specifications

### 2 - 1 Specifications

(2)Based on a dT of 45 K |

(3)Including piping + PHE + back-up heater; excluding expansion vessel |

(4)Measured with a pressure drop of 10 kPa in the heating system at an operating condition of leaving water 47-55°C in a room with an ambient of 20°C. DB/WB 7°C/6°. |

(5)For more details, see operation range drawing |

(6)4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(7)Above mentioned power supply of the hydrobox is for the backup heater only. The switch box and the pump of the hydrobox are supplied via the outdoor unit. The optional domestic hot water tank has a separate power supply.

Technical specifications				ELVZ12S23E9W	ELVZ12S18E9W	
Heater capacity	Step1		kW	3		
	Step2		kW	max. 6 kW		
Casing	Colour			White + Black		
	Material			Precoated sheet metal		
Dimensions	Unit	Height	mm	1,855	1,655	
		Width	mm		595	
		Depth	mm		634	
	Packed unit	Height	mm	2,020		1,820
		Width	mm		720	
		Depth	mm		740	
Weight	Unit		kg	141	133	
	Packed unit		kg	160	152	
Packing	Material			Wood / Carton / Metal / PE wrapping foil		
	Weight		kg	19		
PED	Category			Category II		
	Most critical part	Name	Bar*l	Plate heat exchanger		
		Ps*V		60		
Refrigerant side heat exchanger	Type			Plate heat exchanger		
	Quantity			1		
	Plates	Quantity		66		
Pump	Type			Grundfos UPM4L K 15-75 130 9 DKI		
	Nr of speeds			PWM		
	Power input		W	75		
Pump Additional Zone	Nr of speeds			PWM		
	Power input		W	75		
	Type			UPM4L K 15-75 1309 DKI		
Pump Main Zone	Nr of speeds			PWM		
	Power input		W	75		
	Type			UPM4L K 15-75 1309 DKI		
Water side Heat exchanger	Type			Plate heat exchanger		
	Model			ACH43-66AH-F		
	Quantity			1		
	Plates	Quantity		66		
	Water volume		l	1.58		
	Water flow rate	Min.	l/min	20.0 (1)		
Expansion vessel	Volume		l	10		
Expansion vessel	Max. water pressure		bar	3		
	Pre pressure		bar	1		
Water Filter Additional Zone	Diameter perforations		mm	0.8		
	Material			Plastic / Stainless steel		
Water filter Main Zone	Diameter perforations		mm	1.0		
	Material			Copper - brass - stainless steel		
Tank	Name			Stainless steel domestic hot water tank 230 L	Stainless steel domestic hot water tank 180 l	
	Water volume		l	230	180	
	Material			Stainless steel (DIN 1.4521)		
	Maximum water temperature		°C	70.0		
	Maximum water pressure		bar	10		
	Insulation	Material			Polyurethane foam	
		Heat loss		kWh/24h	1.4 (2)	1.2 (2)
	Standing heat loss	S		W	58	50
	Storage volume	V		l	220	181
	Corrosion protection				Pickling	
Energy efficiency class				B		
General	Supplier/ Manufacturer details	Name or trademark		Daikin Europe N.V.		
		Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium		
3-way valve	Coefficient of flow (kV)	Space heating	m <sup>3</sup> /h	8		
		Domestic hot water tank	m <sup>3</sup> /h	10		
3-way valve mixing	Coefficient of flow (kV)	Bypass	m <sup>3</sup> /h	13		
		Main zone only	m <sup>3</sup> /h	8		
Water circuit	Total water volume		l	5.2 (3)		
	Minimum water volume in the system for cooling		l	20		
	Minimum water volume in the system for heating		l	20		

## 2 Specifications

### 2 - 1 Specifications

2

Technical specifications				ELVZ12S23E9W	ELVZ12S18E9W
Water circuit - space heating side (additional zone)	Air purge valve			Yes	
	Drain valve / fill valve			No	
	Manometer			Yes	
	Piping connections diameter	inch		G 1" (FEMALE)	
	Safety valve	bar		3	
Water circuit - space heating side (main zone)	Shut off valve			Yes	
	Air purge valve			No	
	Drain valve / fill valve			Yes	
	Manometer			No	
	Piping connections diameter	inch		G 1 (FEMALE)	
Water circuit - space heating side (main zone)	Safety valve		bar	3	
	Shut off valve			Yes	
Water circuit - Domestic hot water side	Piping material			Cu	
	Piping connections	Cold water in / Hot water out	inch	G 3/4" FEMALE	
		Recirculation connection	inch	G 3/4" FEMALE	
Refrigerant circuit	Gas side diameter		mm	15.9	
	Liquid side diameter		mm	6.35	
Sound power level	Nom.		dBA	44.0 (4)	
Sound pressure level	Nom.		dBA	30.0 (4)	
Operation range	Heating	Ambient	Min.	°C	-25 (5)
			Max.	°C	25 (5)
		Water side	Min.	°C	15 (5)
			Max.	°C	65 (5)
	Indoor installation	Ambient	Min.	°CDB	5
		Max.	°CDB	35	
	Cooling	Ambient	Min.	°CDB	10 (5)
			Max.	°CDB	43 (5)
		Water side	Min.	°C	5 (5)
			Max.	°C	22 (5)
	Domestic hot water	Ambient	Min.	°CDB	-25 (5)
			Max.	°CDB	35 (5)
		Water side	Min.	°C	25 (5)
			Max.	°C	62 (5)
Safety devices	Item	01		Thermal cut out	

Electrical specifications				ELVZ12S23E9W	ELVZ12S18E9W
Power supply	Name			See note 7	
	Voltage range	Min.	%	-10	
		Max.	%	10	
IP class	IP			X0	
Electric heater	Power supply	Name		9W	
		Phase		3~	
		Voltage		V	
	Current	Maximum running current		A	
		Recommended fuses		A	
				20.000 (6)	

## 2 Specifications

### 2 - 1 Specifications

Electrical specifications			ELVZ12S23E9W	ELVZ12S18E9W
Wiring connections	Communication cable	Quantity	3+GRD	
		Remark	1.5 mm <sup>2</sup>	
	Electric meter	Quantity	2	
		Remark	Minimum 0.75 mm <sup>2</sup> (SVDC pulse detection)	
	Preferential kWh rate	Quantity	Power: 2	
		Remark	Power 6.3A (Select diameter and type according to national and local regulations)	
	Domestic hot water pump	Quantity	2	
		Remark	Minimum 0.75 mm <sup>2</sup> (2A inrush, 1A continuous)	
	For power supply back-up heater	Quantity	Prewired	
		Remark		
	For connection with R6T	Quantity	2	
		Remark	Minimum 0.75 mm <sup>2</sup>	
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual	
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm <sup>2</sup>	
	For connection with M2S	Quantity	2	
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm <sup>2</sup>	
For connection with optional FWXV* (demand input and output)	Quantity	4		
	Remark	100 mA, minimum 0.75 mm <sup>2</sup>		

(1) Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |

(2) Based on a dT of 45 K |

(3) Including piping + PHE + back-up heater; excluding expansion vessel |

(4) Measured with a pressure drop of 10 kPa in the heating system at an operating condition of leaving water 47-55°C in a room with an ambient of 20°C. DB/WB 7°C/6°. |

(5) For more details, see operation range drawing |

(6) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(7) Above mentioned power supply of the hydrobox is for the backup heater only. The switch box and the pump of the hydrobox are supplied via the outdoor unit. The optional domestic hot water tank has a separate power supply.

# 3 Electrical data

## 3 - 1 Electrical Data

**3**
**ELBH-E6V**
**ELBH-E9W**
**ELBX-E6V**
**ELBX-E9W**
**ELSH-E**
**ELSHB-E**
**ELSX-E**
**ELSX-B**
**ELVH-E6V**
**ELVH-E9W**
**ELVX-E6V**
**ELVX-E9W**
**ELVZ-E6V**
**ELVZ-E9W**
**\* Electrical meter specification**

- Pulse meter type/voltage-free contact for 5 V DC detection by PCB.

- Possible number of pulses

·0.1· pulse/kWh

·1· pulse/kWh

·10· pulse/kWh

·100· pulse/kWh

·1000· pulse/kWh

- Pulse duration

minimum On time: ·40ms·

Minirr

- Measurement type (depending on installation)

Single-phase AC meter

Three-phase AC meter

 Three-phase AC meter Balanced loads

 Three-phase AC meter Unbalanced loads
**\* Electrical meter installation guideline**

- It is the responsibility of the installer to cover the complete power consumption with electrical meters (combination of estimation and metering is not allowed).

- Required number of electrical meters

Outdoor unit type		ERRA(08/10/12)EA*								
Indoor unit type		ELS(H/X)(B)12P(30/50)EF			ELB(H/X)12EF*			ELV(H/X/Z)12S(18/23)EJ*		
Backup heater type		EKECBU*	EKECBU*	EKECBU*	6V		9W	6V		9W
Backup heater power		1~	1~	3~	1~	3~	3~	1~	3~	3~
Backup heater		1 / 2 / 3	2 / 4 / 6	3 / 6 / 9	2 / 4 / 6	6 kW	3 / 6 / 9	2 / 4 / 6	6 kW	3 / 6 / 9
<b>Normal kWh rate power supply</b>										
Electrical meter type	1~	1	1	-	1	-	-	1	-	-
	3~ balanced	-	-	-	-	-	-	-	-	-
	3~ unbalanced	-	-	1	-	1	1	-	1	1
<b>Preferential kWh rate power supply</b>										
Electrical meter type	1~	2	2	1	2	1	1	2	1	1
	3~ balanced	-	-	-	-	-	-	-	-	-
	3~ unbalanced	-	-	1	-	1	1	-	1	1

**4D142815**

# 3 Electrical data

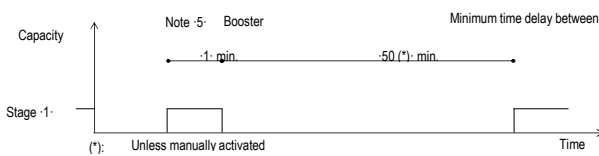
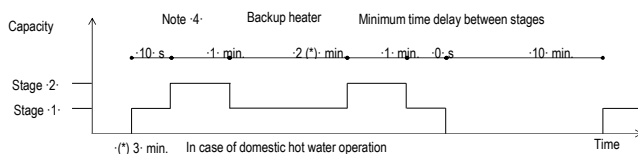
## 3 - 1 Electrical Data

ELBH-E6V  
 ELBH-E9W  
 ELBX-E6V  
 ELBX-E9W  
 ELVH-E6V  
 ELVH-E9W  
 ELVX-E6V  
 ELVX-E9W  
 ELVZ-E6V  
 ELVZ-E9W

3

Electrical specifications of the backup heaters and booster heaters

Type	6V											9W						
	2 - 4	2 - 6	2-4 (in case of emergency: 2)		6	3 - 6	3 - 9	3 - 6 (in case of			2							
Capacity setting	[kW]											3						
Capacity stage -	2											1						
Capacity stage -1-	2											2						
Capacity stage -2-	4											9						
Backup heater	Minimum time delay between stages											Note -4-						
	Power supply (1)	Phase	1~											3~				
		Frequency	50											3~				
	Current	Voltage	230 +-10%											400 +-10%				
		Nominal running current	A	17,4	26,1	17,4	26,1	15	8,7	13	8,7	13						
		Zmax (backup heater) (2)	Complex	0,22														
Minimum Ssc value		kVA	(3)															
Booster heater (optional) (* KHW models)	Capacity setting											3						
	Capacity stage -											1						
	Minimum time delay between stages											Note -5-						
	Nominal running current		+EK*V3	A											13			
	Booster heater		+EK*Z2	-											75			
	Zmax	Booster heater	(2)	Complex														
Nominal running current	Backup heater +-	Booster heater	Backup heater + EK*V3	30,4 (17,4+13)	39,1 (26,1+13)	30,4 (17,4+13)	39,1 (26,1+13)	28 (15 + 13)	21,7 (8,7+13)	26 (13+13)	21,7 (8,7+13)	26 (13+13)						
			Backup heater + EK*Z2												22,5 (15 + 7,5)	16,2 (8,7+7,5)	20,5 (13+7,5)	16,2 (8,7+7,5)
	Minimum Ssc value	Backup heater +-	Booster heater + EK*V3	kVA											(3)			
		Booster heater + EK*Z2	kVA											(3)				
Notes	(1) The above-mentioned power supply of the hydrobox is for the backup heater only.																	
	(2) The optional domestic hot water tank has a separate power supply. In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax.																	
	(3) The equipment complies with EN/IEC 61000-3-12.																	
	EN/IEC 61000-3-11 European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤ 75 A.																	
EN/IEC 61000-3-12 European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase.																		
Zsys	System impedance																	



4D121020C

# 4 Combination table

## 4 - 1 Combination Table

4

**ELVH-E6V**  
**ELVH-E9W**  
**ELVX-E6V**  
**ELVX-E9W**  
**ELVZ-E6V**  
**ELVZ-E9W**

Factory-mounted equipment for -ELV(H/X/Z)12S\*EJ\*-

Description	ELV(H/X/Z)12S*EJ*			
Heating only model -ELVH-	18 - 6V (8)	18 - 9W (8)	23 - 6V (8)	23 - 9W (8)
Reversible model -ELVX-	18 - 6V (8)	18 - 9W (8)	23 - 6V (8)	23 - 9W (8)
Integrated Bizone -ELVZ-	18 - 6V (8)	18 - 9W (8)	23 - 6V (8)	23 - 9W (8)
Backup heater 2-4-6kW 1N~230 V-	o	-	o	-
Backup heater 2-4-6kW 3~230 V-	o	-	o	-
Backup heater 3-6-9kW 3N~400 V-	-	o	-	o
Domestic hot water tank -180L-	o	o	-	-
Domestic hot water tank -230L-	-	-	o	o

Outdoor combination table for -ELV(H/X/Z)12S(18/23)EJ-

		ERRA08EA(V3/W1)	ERRA10EA(V3/W1)	ERRA12EA(V3/W1)
ELVH12S(18/23)EJ*	Heating only indoor unit	o	o	o
ELVX12S(18/23)EJ*	Reversible indoor unit	o	o	o
ELVZ12S(18/23)EJ*	Integrated Bizone	o	o	o

Kit availability for indoor units

Reference	Description	ETV*12S*EJ*			
		18 - 6V	18 - 9W	23 - 6V	23 - 9W
ELVH*	Heating only indoor unit				
ELVX*	Reversible indoor unit				
ELVZ*	Integrated Bizone				
EKRP1HBAA	Digital I/O PCB	*(1) (2)	o	o	o
EKRP1AHTA	Demand PCB	*(3)	o	o	o
BRC1HHDA*	HCI (Human Comfort interface)		o	o	o
EKPCCB4	PC cable	*(4)	o	o	o
KRCS01-1	Remote indoor sensor	*(5)	o	o	o
EKRS01	Remote sensor for outdoor	*(5)	o	o	o
EKCCS-W	Universal centralised user interface		o	o	o
DCOM-LT/O	DCOM gateway		o	o	o
DCOM-LT/MB	DCOM gateway		o	o	o
EKHVCONV4	Conversion kit: heating only to reversible.		o	o	o
FWXV10-15-20ATV3	Heat pump convactor	*(6)	o	o	o
FWXT10-15-20ATV3	Heat pump convactor	*(6)	o	o	o
FWXM10-15-20ATV3	Heat pump convactor	*(6)	o	o	o
EKVKHPC	Heat pump convactor valve kit		o	o	o
EKRTRWA	Wired room thermostat		o	o	o
EKRTRB	Wireless room thermostat		o	o	o
EKRTEIS	External sensor room thermostat		o	o	o
EKWUHFHTA1V3	Multi-zoning base unit 230 V	*(7)	o	o	o
EKWCTRD1V3	Digital thermostat 230 V	*(9)	o	o	o
EKWCTRAN1V3	Analogue thermostat 230 V	*(9)	o	o	o
EKWCVATR1V3	Actuator 230 V	*(9)	o	o	o
EKRELSG	Relay for Smart Grid		o	o	o
BRP069A71	WLAN module	*(10)	o	o	o
BRP069A62	LAN module	*(10)	o	o	o
ESAE04A01*	Daikin Residential Controller		o	o	o

Kit availability for outdoor units

Reference	Description	ERRA08EA(V3/W1)	ERRA10EA(V3/W1)	ERRA12EA(V3/W1)
EKMST1	Mounting stand	o	o	o
EKMST2	Mounting stand	o	o	o

Reference	Description	ETV*12S*EJ*	
		ELVH*	ELVX*
	Only applicable for :ELVH* & ELVX*- models		
EKMIKPOA	Mixing kit – PCB only	o	o
EKMIKPHA	Mixing kit – PCB with hydraulics	o	o
EKMIKHMA	Hydraulics – mixed pump group	*(11)	o
EKMIKHUA	Hydraulics – unmixed pump group	*(11)	o
EKMIKBVA	Balancing vessel	o	o
EKMIKDIA	Distributor for balancing vessel	*(12)	o

**Notes**

- (1) PCB that provides additional output connections: -
  - (a) Control external heat source (bivalent operation).
  - (b) Output remote ON/OFF signal space heating/cooling
  - (c) Remote alarm output
- (2) Additional relays to allow bivalent control in combination with an external room thermostat are field-supplied.
- (3) PCB to receive up to -4- digital inputs for power limitation
- (4) Data cable for connection with PC.
- (5) Only 1 remote sensor can be connected: indoor OR outdoor sensor.
- (6) The valve kit is mandatory if a heat pump convactor is installed on a reversible model (not mandatory for heating only models).
- (7) -EKRTEIS- can only be used in combination with -EKRTRB-
- (8) The backup heater capacity depends on a user interface setting.
- (9) Multi-zoning wired controls
- (10) The WLAN cartridge is supplied in the accessory bag of the unit and is meant to be plugged into the SD card slot on the MMI-2. In case of bad signal reception, the WLAN cartridge can be removed and replaced by the WLAN or LAN module.
- (11) Only possible in combination with -EKMIKPOA-
- (12) Only possible in combination with -EKMIKBVA- and -EKMIKPHA- or -EKMIKHUA-

**Remark**

Other combinations than mentioned in this combination table are prohibited.

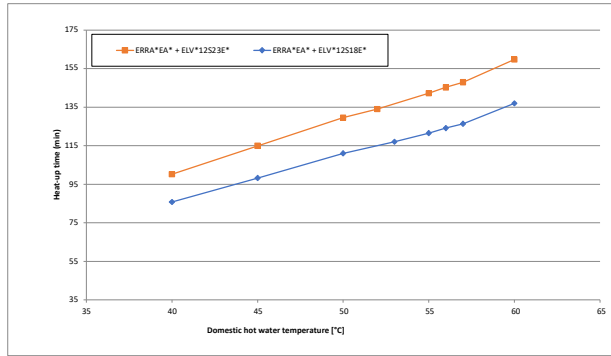
**4D143279**

# 5 Capacity tables

## 5 - 1 Domestic Hot Water performance

- ELSH-E
- ELSHB-E
- ELSX-E
- ELSX-B-E
- ELVH-E6V
- ELVH-E9W
- ELVX-E6V
- ELVX-E9W
- ELVZ-E6V
- ELVZ-E9W

Heat-up times



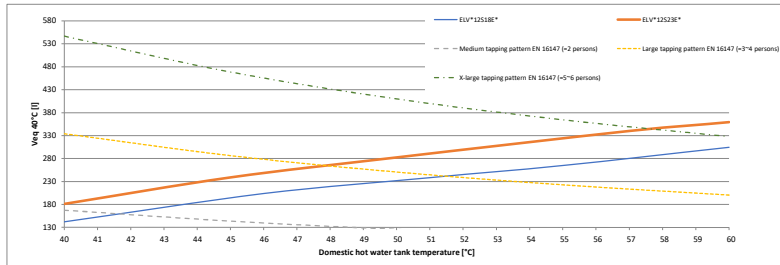
Notes

- Time the indoor unit (heat pump only operation) requires to heat up the domestic hot water tank from 10°C to the indicated temperature. See the operation range for maximum domestic hot water tank temperature during heat pump only operation.

Model name	Heat-up time domestic hot water tank until
ERRA(O8/10/12)EA* + ELV*12518E*	~98 min.
ERRA(O8/10/12)EA* + ELV*12523E*	~115 min.

Selection guide for the domestic hot water tank volume

Veq 40°C = the amount of water with a temperature of 40°C that can be tapped when the domestic hot water tank is heated to a certain temperature, and the temperature of the cold inlet water is 10°C.

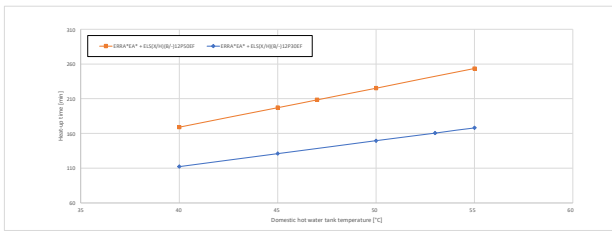


If a higher daily Veq 40°C is required, then additional heat-up cycles are required within 24 hours. See the operation manual for more information.

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### ELSH-E / ELSHB-E / ELSX-E / ELSXB-E / ELVH-E6V / ELVH-E9W / ELVX-E6V / ELVX-E9W / ELVZ-E6V / ELVZ-E9W

Heat-up times



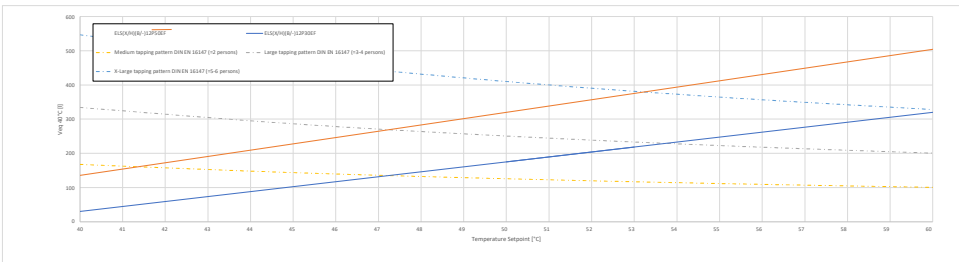
Model name	Heat-up time domestic hot water tank until 45°C
ERRA*EA* + ELSX(H)B-E (12P)SEF	~124 min.
ERRA*EA* + ELSX(H)B-E (12P)SEI	~107 min.

Notes

- Time the indoor unit (heat pump only operation) requires to heat up the domestic hot water tank from 10°C to the indicated temperature. See the operation range for maximum domestic hot water tank temperature during heat pump only operation.

Selection guide for the domestic hot water tank volume

Veq 40°C = the amount of water with a temperature of 40°C that can be tapped when the domestic hot water tank is heated to a certain temperature, and the temperature of the cold inlet water is 10°C.



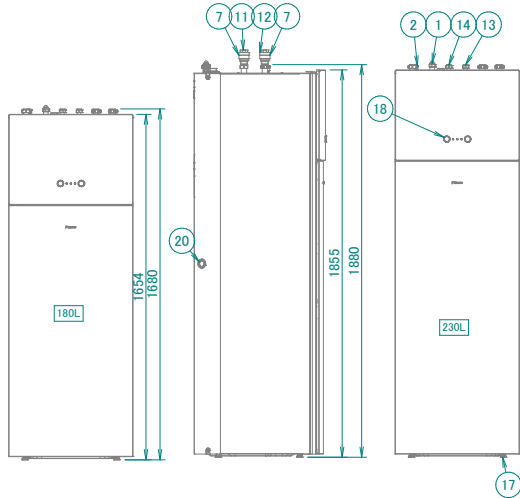
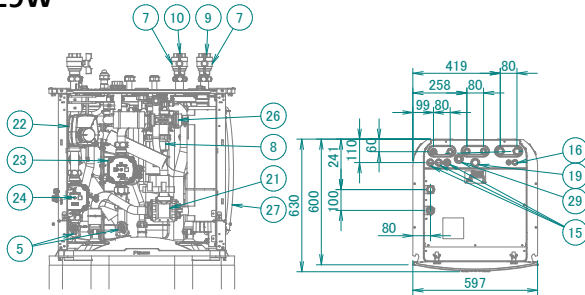
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# 6 Dimensional drawings

## 6 - 1 Dimensional Drawings

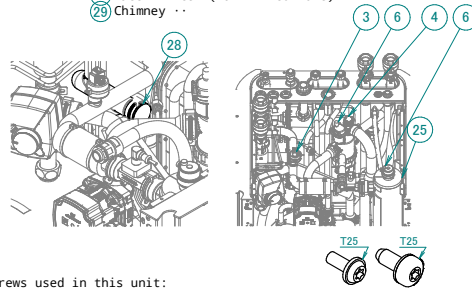
6

**ELVZ-E6V**  
**ELVZ-E9W**



The main zone is the temperature zone with the lowest temperature.  
The additional zone is the temperature zone with the highest temperature.

- ① Gas pipe connection ·Ø15.9 mm· flare
- ② Liquid pipe connection ·Ø6.35 mm· flare
- ③ Space heating water pressure sensor
- ④ Safety valve
- ⑤ Drain valve water circuit
- ⑥ Air purge
- ⑦ Shut-off valve
- ⑧ Magnetic filter / dirt separator
- ⑨ Water IN connection (additional/direct zone) ·1"-BSP· (female)
- ⑩ Water OUT connection (additional/direct zone) ·1"-BSP· (female)
- ⑪ Water IN connection (main/mixed zone) ·1"-BSP· (female)
- ⑫ Water OUT connection (main/mixed zone) ·1"-BSP· (female)
- ⑬ Domestic hot water: cold water in ·3/4" F BSP·
- ⑭ Domestic hot water: hot water out ·3/4" F BSP·
- ⑮ High voltage wiring intake ·Ø24 mm·
- ⑯ Low voltage wiring intake ·Ø15 mm·
- ⑰ Levelling feet
- ⑱ User interface
- ⑲ Recirculation connection ·G 3/4"· (female)
- ⑳ Drain outlet (unit + safety valve)
- ㉑ 3-way valve (space heating/domestic hot water)
- ㉒ 3-way valve (mixing valve for the main/mixed zone)
- ㉓ Pump (additional/direct zone)
- ㉔ Pump (main/mixed zone)
- ㉕ Backup heater
- ㉖ Flow sensor
- ㉗ Expansion vessel
- ㉘ Water filter (main/mixed zone)
- ㉙ Chimney ..



Screws used in this unit:  
The typical field installation has to be done according to the applicable legislation.  
For examples, refer to the installer reference guide.

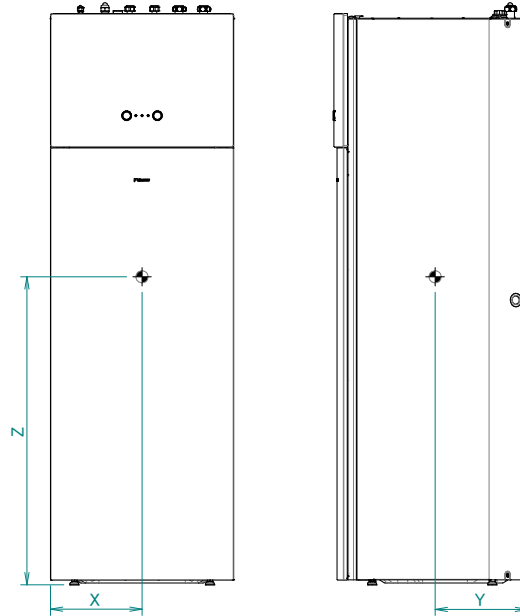
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# 7 Centre of gravity

## 7 - 1 Centre of Gravity

**ELVH-E6V**  
**ELVH-E9W**  
**ELVX-E6V**  
**ELVX-E9W**  
**ELVZ-E6V**  
**ELVZ-E9W**

MODEL	X	Y	Z
ELV (H/X) 12S18EJ*	300	290	940
ELV (H/X) 12S23EJ*	300	295	1070
ELVZ16S18EJ*	290	300	970
ELVZ16S23EJ*	290	305	1090



**3D146975**



# 9 Wiring diagrams

## 9 - 1 Notes & Legend

### ELVZ-E6V / ELVZ-E9W

#### LEGEND

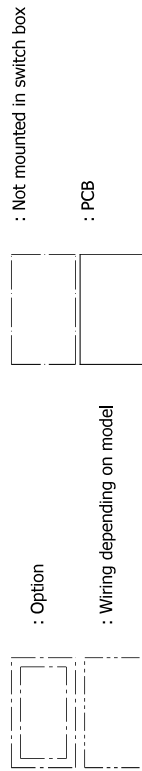
Translation can be found in the installation manual.



Part n°	Description	#	
A1P	main PCB		
A2P	On/OFF thermostat (PC=power circuit)		
A3P	heat pump convactor		
A4P	digital I/O PCB		
A5P	bizone PCB		
A6P	current loop PCB		
A8P	demand PCB		
A9P	status indicator		
A11P	MMI main PCB		
A13P	LAN adapter		
A14P	user interface PCB		
A15P	receiver PCB (wireless)		
A20P	On/OFF thermostat		
B2L	WLAN module		
B2P	pulse type flow sensor		
B1PW	water pressure sensor		
CN* (A4P)	connector		
DS1 (A5P)	dipswitch		
DS1 (A8P)	dipswitch		
E1H	back up heater element (1 kW)		
E2H	back up heater element (2 kW)		
E*P (A9P)	indication LED		
F1B	overcurrent fuse backup heater		
F1T	thermal fuse backup heater		
F1U, F2U (A4P)	fuse 5 A 250 V for digital I/O PCB		
F1U, F2U (A5P)	fuse T 3.15 A 250 V for PCB		
FU1 (A1P)	fuse T 5 A 250 V for PCB		
K1A, K2A	high voltage smartgrid relay		
K1M, K2M	contactor backup heater		
K5M	safety contactor BUH		
K6M	relay 3 way valve bypass		
K7M	relay 3 way valve flow		
K*R (A1P, A4P)	relay on PCB		
M1P	additional zone pump		
M1S	mixing 3 way valve		
M2P	domestic hot water pump		
M2S	2 way valve for cooling mode		
M3P	main zone pump		
M3S	3 way valve for space heating /domestic hot water		
P1M	MMI display		
PC (A15P)	power circuit		
PHC1 (A4P)	optocoupler input circuit		
Q1L	thermal protector backup heater		
Q3L, Q4L	safety thermostat		
Q*DI	earth leakage circuit breaker		
R1H (A2P)	humidity sensor		
R1T (A1P)	outlet water heat exchanger thermostat		
R1T (A2P)	ambient sensor On/OFF thermostat		
R1T (A14P)	ambient sensor user interface		
R2T (A1P)	outlet backup heater thermostat		
R2T (A2P)	external sensor (floor or ambient)		
R3T	refrigerant liquid side thermostat		
R4T	inlet water thermostat		
R5T, R8T	domestic hot water thermostat		
R6T	external indoor or outdoor ambient thermostat		
R7T	mixed leaving water thermostat		
S1S	preferential kWh rate PS contact		
S2S	electrical meter pulse input 1		
S3S	electrical meter pulse input 2		
S4S	smartgrid feed-in		
S6S-S9S	digital power limitation inputs		
S10S-S11S	low voltage smartgrid contact		
S51 (A4P)	selector switch		
SW1~2 (A11P)	turn buttons		
SW3~5 (A11P)	push button		
TR1	power supply transformer		
X6M	BUH power supply terminal strip		
X10M	smartgrid power supply terminal strip connector		
X*, X*A, X*H*, X*Y			
X*M	terminal strip		

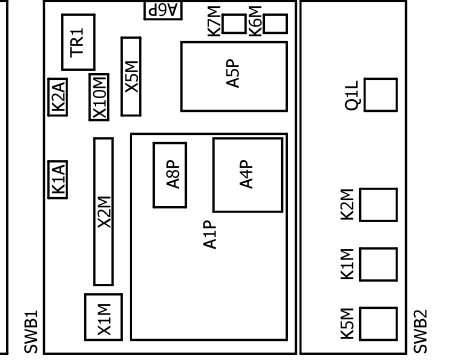
#### NOTES to go through before starting the unit

- X1M : Main terminal
- X2M : Field wiring terminal for AC
- X5M : Field wiring terminal for DC
- X6M : BUH Power supply terminal
- X10M : Smartgrid terminal
- : Earth wiring
- - - : Field supply
- (1) : Several wiring possibilities



Note 1 : Connection point of the power supply for the BUH should be foreseen outside the unit.

#### POSITION IN SWITCH BOX



- Backup heater power supply
  - 6T1 (3~, 230V, 6kW)
  - 6V3 (1N~, 230V, 6kW)
  - 6WN/9WN (3N~, 400V, 6/9kW)

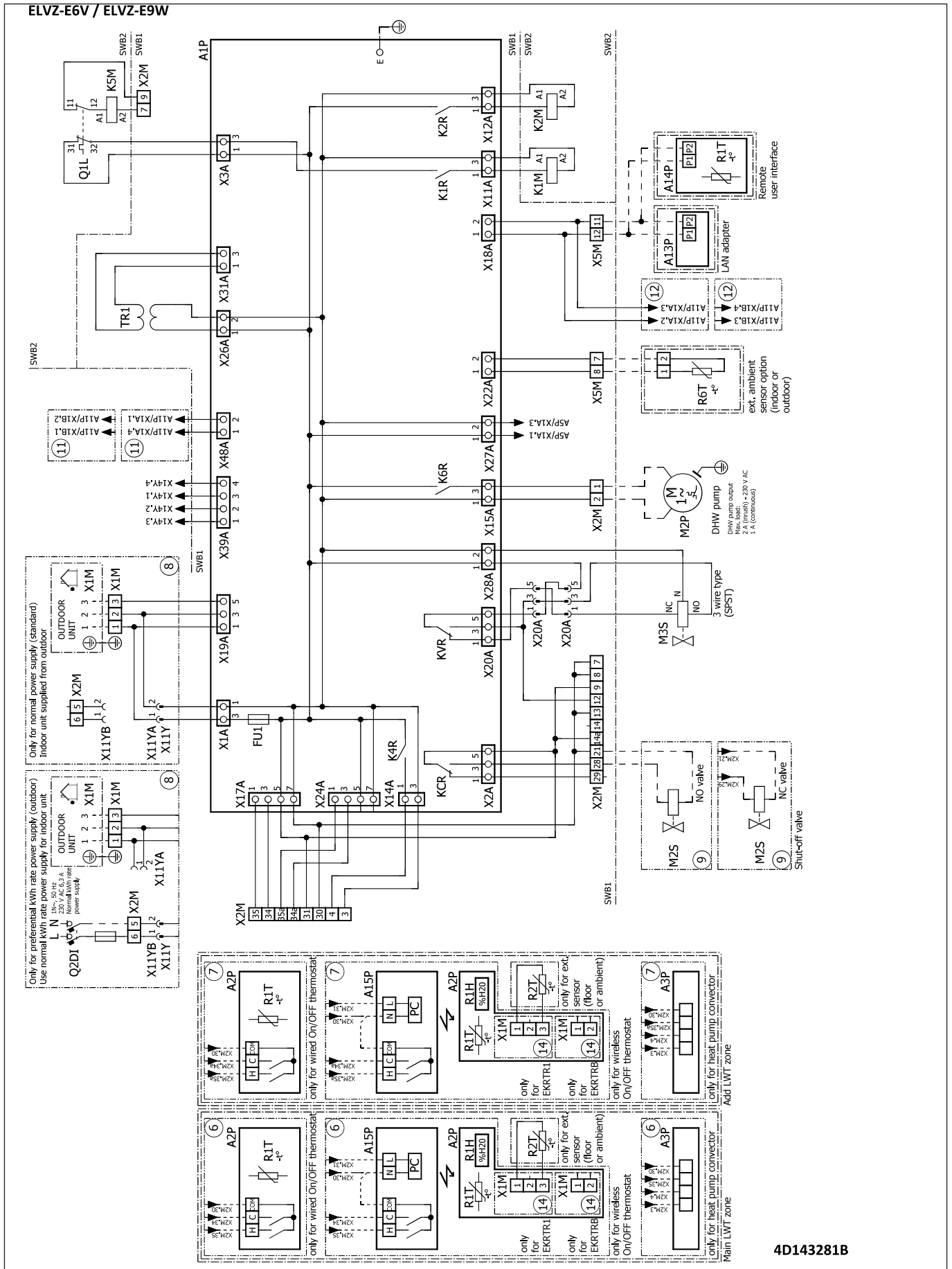
- User installed options:
- LAN adapter
  - Remote user interface
  - Ext. indoor thermostat
  - Ext. outdoor thermostat
  - Digital I/O PCB
  - Demand PCB
  - Safety thermostat
  - Smartgrid
  - WLAN adapter module
  - WLAN cartridge
  - Main LWT:
    - On/OFF thermostat (wired)
    - On/OFF thermostat (wireless)
    - Ext. thermostat
  - Heat pump convactor
  - Add LWT:
    - On/OFF thermostat (wired)
    - On/OFF thermostat (wireless)
    - Ext. thermostat
    - Heat pump convactor

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# 9 Wiring diagrams

## 9 - 2 Control Circuit

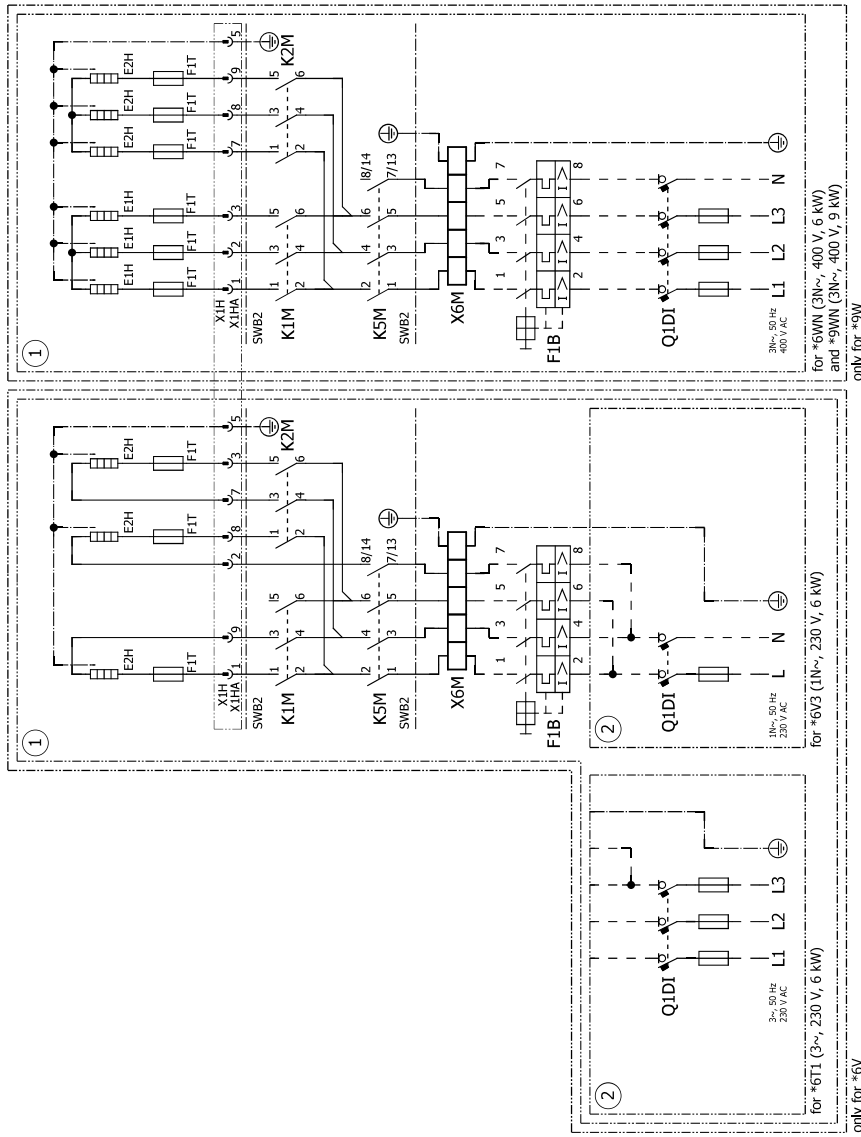
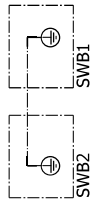




# 9 Wiring diagrams

## 9 - 3 Power Supply, Back-up Heater

ELVZ-E6V / ELVZ-E9W

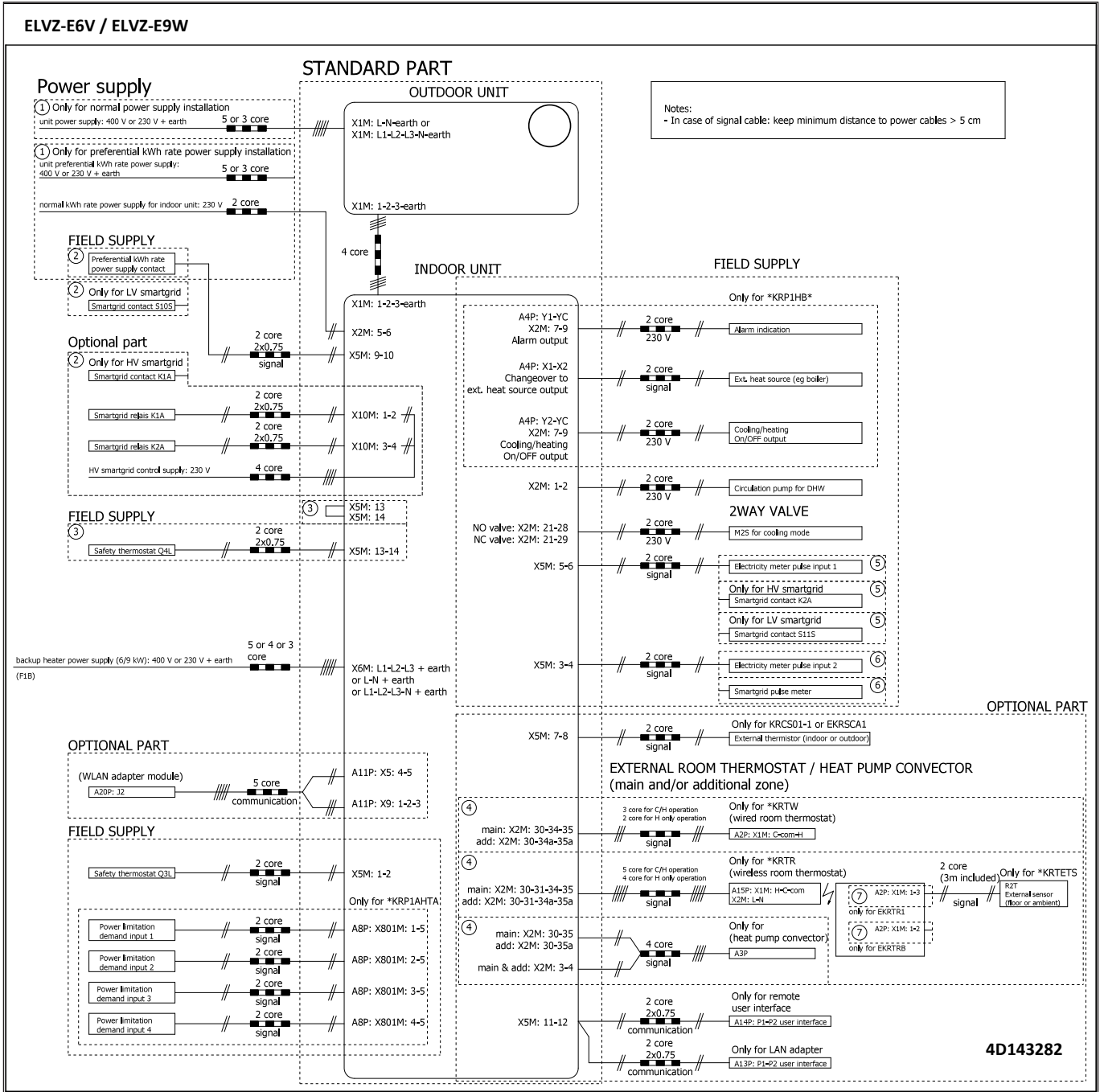


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# 10 External connection diagrams

## 10 - 1 External Connection Diagrams

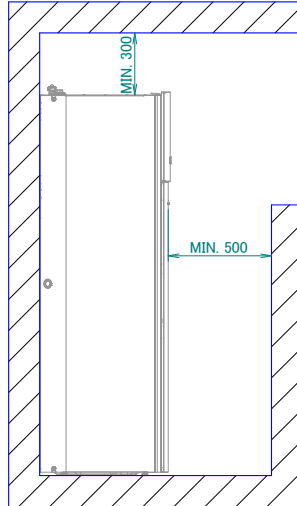
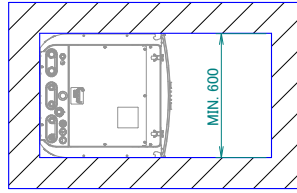
10



# 11 Installation

## 11 - 1 Installation Method

ELVH-E6V  
ELVH-E9W  
ELVX-E6V  
ELVX-E9W  
ELVZ-E6V  
ELVZ-E9W

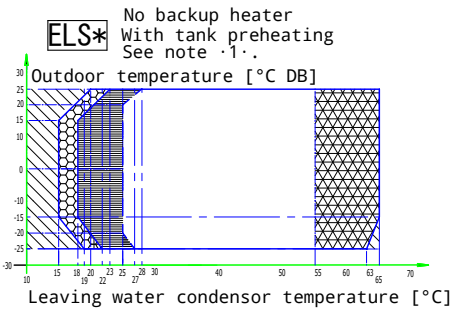
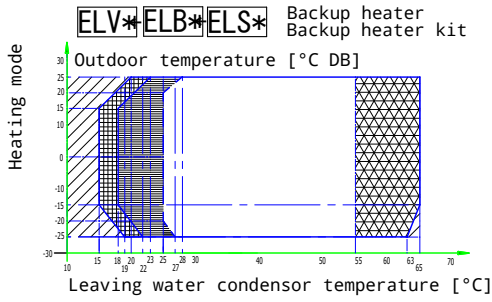
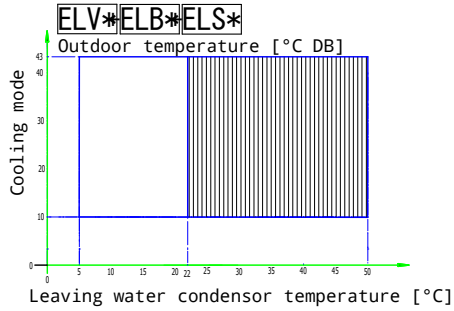


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# 12 Operation range

## 12 - 1 Operation Range

ELBH-E6V  
 ELBH-E9W  
 ELBX-E6V  
 ELBX-E9W  
 ELSH-E  
 ELSHB-E  
 ELSX-E  
 ELSXB-E  
 ELVH-E6V  
 ELVH-E9W  
 ELVX-E6V  
 ELVX-E9W  
 ELVZ-E6V  
 ELVZ-E9W



- Legend**
- Backup heater only operation
  - No outdoor unit operation
  - Heat pump + backup heater operation
  - Pull-up area
  - Auxiliary boiler only operation
  - No outdoor unit operation
  - Heat pump + auxiliary boiler operation
  - Pull-up area
  - Outdoor unit operation if controller setpoint is regulated to minimal leaving water temperature request.
- See dashed lines

- Outdoor unit operation if setpoint > 55°C and ΔT = 10°C (ΔT = outlet temperature - inlet temperature)
- Pull-down area

- Notes**
1. Tank preheating  
For details, see the installer reference guide.
  2. In restricted power supply mode, the outdoor unit and backup heater can only operate separately.

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ELBH-E6V  
 ELBH-E9W  
 ELBX-E6V  
 ELBX-E9W  
 ELSH-E  
 ELSHB-E  
 ELSX-E  
 ELSXB-E  
 ELVH-E6V  
 ELVH-E9W  
 ELVX-E6V  
 ELVX-E9W  
 ELVZ-E6V  
 ELVZ-E9W

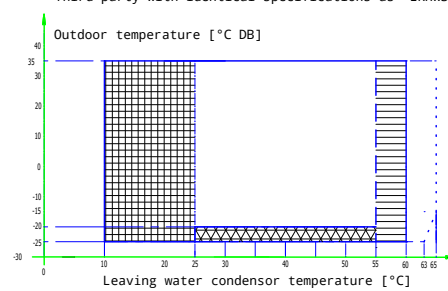
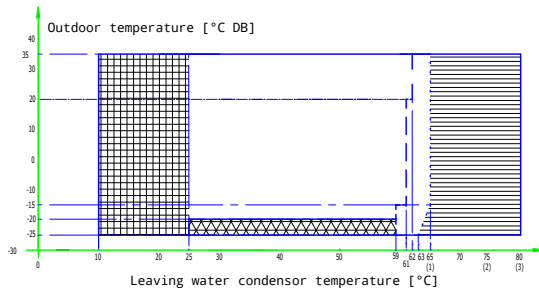
### Domestic hot water heating mode

$$ELV* + ELS* + EKHP* + \begin{matrix} EKHS*200* \\ EKHS*250* \\ EKHS*300* \end{matrix}$$

+ Third-party with identical specifications as ·EKHS\*200\*·

$$EKHS*150* \\ EKHS*180*$$

+ Third-party with identical specifications as ·EKHS\*150\*·



- Legend**
- Setpoint [°C]
  - Domestic hot water
  - Leaving water temperature [°C]
  - Pull-up area
  - Booster heater only operation (if a booster heater is part of the system)
    - (1) ·ELV\*12\*· indoor units only
    - (2) Combination of ·EKHS\*· and ·ELB\*· indoor units / ·ELS\*12\*· indoor units only
    - (3) Combination of ·EKHP\*· and ·ELB\*· indoor units
  - Operation of the outdoor unit is possible. If the outdoor temperature drops below -20°C, unit will continue operation. But when the unit is OFF and the outdoor temperature is below -20°C, the outdoor unit will not start up. The indoor unit and backup heater will start in these cases.

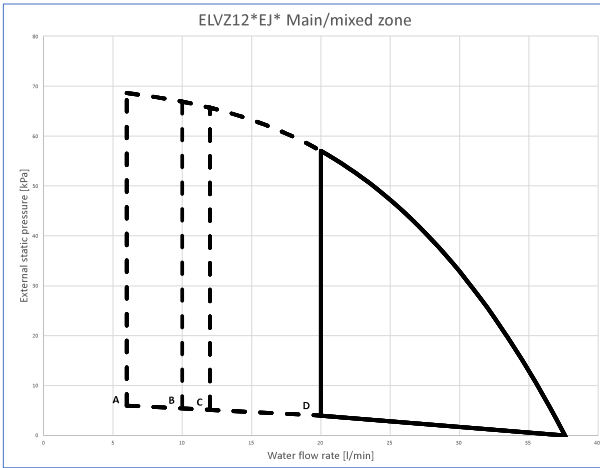
- Notes**
1. In restricted power supply mode (·EKHP\*· only), the outdoor unit, booster heater and backup heater can only operate separately.
  2. Third-party with identical specifications as ·EKHS\*150\*·  
Coil surface > 1.05·m<sup>2</sup> and < 3.7·m<sup>2</sup>  
Tank thermistor and booster heater above heat pump coil.
  3. Third-party with identical specifications as ·EKHS\*200\*·  
Coil surface > 1.8·m<sup>2</sup> and < 3.7·m<sup>2</sup>  
Tank thermistor and booster heater above heat pump coil.

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# 13 Hydraulic performance

## 13 - 1 Static Pressure Drop Unit

**ELVZ-E6V**  
**ELVZ-E9W**

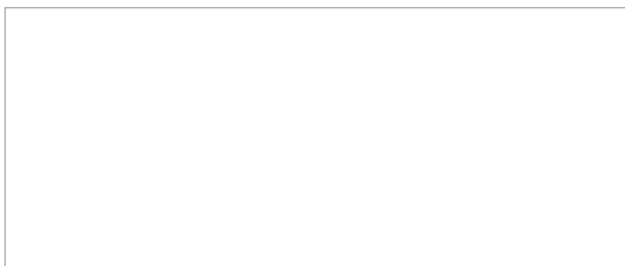


- A= Minimum water flow rate during normal operation
- B= Minimum water flow rate during cooling operation
- C= Minimum water flow rate during backup heater operation
- D= Minimum water flow rate during defrost operation

**Notes**

1. Selecting a flow outside the operating area can damage the unit or cause the unit to malfunction.  
See also the minimum and maximum allowed water flow range in the technical specifications.
2. Water quality must be according to EU directive 2020/2184.

**3D146898**



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05/2023



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