Daikin Altherma mid temperature split Technical Data ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W

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ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W

1 Features

1 - 1 ELBX-E6V, ELBX-E9W, ELBH-E6V, ELBH-E9W

Wall mounted reversible air to water heat pump ideal for low energy houses

- Quick configuration in 9 steps in a high resolution colour interface wizard
- Compact dimensions allows for small installation space, as almost no side clearances are required.
- Combine with a stainless steel tank or ECH2O thermal store.
- 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					ELBH12E6V
Heater capacity	Step 1			kW	2
	Step 2			kW	2 or 4
Casing	Colour				White + Black
	Material				Resin, sheet metal
Dimensions	Unit	Height		mm	840
		Width		mm	440
		Depth		mm	390
	Packed unit	Height		mm	450
		Width		mm	650
		Depth		mm	1,016
Weight	Unit			kg	48.5
	Packed unit			kg	60
Packing	Material				Carton / EPS / PE (Straps) / Wood (pallet)
	Weight			kg	12
PED	Category				Category II
	Most critical part	Name			Plate heat exchanger
		Ps*V		Bar*l	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	70
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
	Max. water pressure			bar	3
	Pre pressure			bar	1
Water filter	Diameter perforations			mm	0.8
	Material				Stainless steel / Plastic
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter			inch	G 1" (female)
	Piping material				Cu
	Internal piping diameter			inch	1"
	Piping			inch	1"
	Safety valve			bar	3
	Manometer				Digital
	Drain valve / fill valve				Yes
	Shut off valve				Yes
	Air purge valve				Yes
	Total water volume			l	3.6
	Minimum water volume in the system for cooling			l	20 (2)
	Minimum water volume in the system for heating			l	20 (2)
Refrigerant circuit	Gas side diameter			mm	15.9
	Liquid side diameter			mm	6.35
Sound power level	Nom.			dBA	44.0 (3)
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

2 Specifications

2 - 1 Specifications

Electrical specifications				ELBH12E6V
Power supply	Name			See note 7
	Voltage range	Min.	%	-10
		Max.	%	10
IP class	IP			IP X0B
Electric heater	Power supply	Name		6V3
		Phase		1~ / 3~
		Frequency	Hz	50
		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 mm²
	Electric meter	Quantity		2
		Remark		Minimum 0.75 mm² (5VDC 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 mm² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity		Prewired
		Remark		Select diameter & type according to national & local regulations
	For connection with R6T	Quantity		2
		Remark		Minimum 0.75 mm²
	For connection with A3P	Quantity		Depends on thermostat type, cf. installation manual
		Remark		Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with M2S	Quantity		2
		Remark		Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with optional FWXV* (demand input and output)	Quantity		4
		Remark		100 mA, minimum 0.75 mm²

(1)Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |
(2)Excluding the water volume in the unit. This volume will guarantee suficient defrost energy for all applications, however, this volume can be multiplied by 0,66 if the heating sepoint is ≥ 45° C (eg. Fan coils) |
(3)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°. |
(4)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. Sound power level is an absolute value that a so |
(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. |
Select diameter and type according to national and local regulations

Technical specifications				ELBH12E9W
Heater capacity	Step 1		kW	3
	Step 2		kW	max. 6 kW
Casing	Colour			White + Black
	Material			Resin, sheet metal
Dimensions	Unit	Height	mm	840
		Width	mm	440
		Depth	mm	390
	Packed unit	Height	mm	450
		Width	mm	650
		Depth	mm	1,016
Weight	Unit		kg	48.5
	Packed unit		kg	60
Packing	Material			Carton / EPS / PE (Straps) / Wood (pallet)
	Weight		kg	12
PED	Category			Category II
	Most critical part	Name		Plate heat exchanger
		Ps*V	Bar*l	60
Refrigerant side heat exchanger	Type			Plate heat exchanger
	Quantity			1
	Plates	Quantity		66

2 Specifications

2 - 1 Specifications

Technical specifications					ELBH12E9W
Pump	Type				Grundfos UPM4L K 15-75 130 9 DKI
	Nr of speeds				PWM
	Power input			W	70
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
	Max. water pressure			bar	3
	Pre pressure			bar	1
Water filter	Diameter perforations			mm	0.8
	Material				Stainless steel / Plastic
General	Supplier/	Name or trademark			Daikin Europe N.V.
	Manufacturer details	Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter			inch	G 1" (female)
	Piping material				Cu
	Internal piping diameter			inch	1"
	Piping			inch	1"
	Safety valve			bar	3
	Manometer				Digital
	Drain valve / fill valve				Yes
	Shut off valve				Yes
	Air purge valve				Yes
	Total water volume			l	3.6
	Minimum water volume in the system for cooling			l	20 (2)
	Minimum water volume in the system for heating			l	20 (2)
Refrigerant circuit	Gas side diameter			mm	15.9
	Liquid side diameter			mm	6.35
Sound power level	Nom.			dBA	44.0 (3)
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				ELBH12E9W
Power supply	Name			See note 7
	Voltage range	Min.	%	-10
		Max.	%	10
IP class	IP			IP X0B
Electric heater	Power supply	Name		9W
		Phase		3~
		Frequency	Hz	50
		Voltage	V	400
	Current	Maximum running current	A	13.0
	Recommended fuses		A	20.000 (6)

2 Specifications

2 - 1 Specifications

Electrical specifications			ELBH12E9W
Wiring connections	Communication cable	Quantity	3+GRD
		Remark	1.5 mm²
	Electric meter	Quantity	2
		Remark	Minimum 0.75 mm² (5VDC 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 mm² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity	Prewired
		Remark	Select diameter & type according to national & local regulations
	For connection with R6T	Quantity	2
		Remark	Minimum 0.75 mm²
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with M2S	Quantity	2
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with optional FWXV* (demand input and output)	Quantity	4
		Remark	100 mA, minimum 0.75 mm²

(1)Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |
(2)Excluding the water volume in the unit. This volume will guarantee suficient defrost energy for all applications, however, this volume can be multiplied by 0,66 if the heating sepoint is ≥ 45° C (eg. Fan coils) |
(3)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°. |
(4)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. Sound power level is an absolute value that a so |
(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. |
Select diameter and type according to national and local regulations

Technical specifications				ELBX12E6V
Heater capacity	Step 1		kW	2
	Step 2		kW	2 or 4
Casing	Colour			White + Black
	Material			Resin, sheet metal
Dimensions	Unit	Height	mm	840
		Width	mm	440
		Depth	mm	390
	Packed unit	Height	mm	450
		Width	mm	650
		Depth	mm	1,016
Weight	Unit		kg	48.5
	Packed unit		kg	60
Packing	Material			Carton / EPS / PE (Straps) / Wood (pallet)
	Weight		kg	12
PED	Category			Category II
	Most critical part	Name		Plate heat exchanger
		Ps*V	Bar*l	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	70
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
	Max. water pressure		bar	3
	Pre pressure		bar	1

2 Specifications

2 - 1 Specifications

Technical specifications					ELBX12E6V
Water filter	Diameter perforations			mm	0.8
	Material				Stainless steel / Plastic
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter			inch	G 1" (female)
	Piping material				Cu
	Internal piping diameter			inch	1"
	Piping			inch	1"
	Safety valve			bar	3
	Manometer				Digital
	Drain valve / fill valve				Yes
	Shut off valve				Yes
	Air purge valve				Yes
	Total water volume			l	3.6
	Minimum water volume in the system for cooling			l	20 (2)
	Minimum water volume in the system for heating			l	20 (2)
Refrigerant circuit	Gas side diameter			mm	15.9
	Liquid side diameter			mm	6.35
Sound power level	Nom.			dBA	44.0 (3)
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					ELBX12E6V
Power supply	Name				See note 7
	Voltage range	Min.		%	-10
		Max.		%	10
IP class	IP				IP X0B
Electric heater	Power supply	Name			6V3
		Phase			1~ / 3~
		Frequency		Hz	50
		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)

2 Specifications

2 - 1 Specifications

Electrical specifications			ELBX12E6V
Wiring connections	Communication cable	Quantity	3+GRD
		Remark	1.5 mm²
	Electric meter	Quantity	2
		Remark	Minimum 0.75 mm² (5VDC 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 mm² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity	Prewired
		Remark	Select diameter & type according to national & local regulations
	For connection with R6T	Quantity	2
		Remark	Minimum 0.75 mm²
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with M2S	Quantity	2
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with optional FWXV* (demand input and output)	Quantity	4
		Remark	100 mA, minimum 0.75 mm²

(1)Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |
(2)Excluding the water volume in the unit. This volume will guarantee suficient defrost energy for all applications, however, this volume can be multiplied by 0,66 if the heating sepoint is ≥ 45° C (eg. Fan coils) |
(3)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°. |
(4)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. Sound power level is an absolute value that a so |
(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. |
Select diameter and type according to national and local regulations

Technical specifications				ELBX12E9W
Heater capacity	Step 1		kW	3
	Step 2		kW	max. 6 kW
Casing	Colour			White + Black
	Material			Resin, sheet metal
Dimensions	Unit	Height	mm	840
		Width	mm	440
		Depth	mm	390
	Packed unit	Height	mm	450
		Width	mm	650
		Depth	mm	1,016
Weight	Unit		kg	48.5
	Packed unit		kg	60
Packing	Material			Carton / EPS / PE (Straps) / Wood (pallet)
	Weight		kg	12
PED	Category			Category II
	Most critical part	Name		Plate heat exchanger
		Ps*V	Bar*l	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	70
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
	Max. water pressure		bar	3
	Pre pressure		bar	1

2 Specifications

2 - 1 Specifications

Technical specifications					ELBX12E9W
Water filter	Diameter perforations			mm	0.8
	Material				Stainless steel / Plastic
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter			inch	G 1" (female)
	Piping material				Cu
	Internal piping diameter			inch	1"
	Piping			inch	1"
	Safety valve			bar	3
	Manometer				Digital
	Drain valve / fill valve				Yes
	Shut off valve				Yes
	Air purge valve				Yes
	Total water volume			l	3.6
	Minimum water volume in the system for cooling			l	20 (2)
	Minimum water volume in the system for heating			l	20 (2)
Refrigerant circuit	Gas side diameter			mm	15.9
	Liquid side diameter			mm	6.35
Sound power level	Nom.			dBA	44.0 (3)
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				ELBX12E9W
Power supply	Name			See note 7
	Voltage range	Min.	%	-10
		Max.	%	10
IP class	IP			IP X0B
Electric heater	Power supply	Name		9W
		Phase		3~
		Frequency	Hz	50
		Voltage	V	400
	Current	Maximum running current	A	13.0
	Recommended fuses		A	20.000 (6)

2 Specifications

2 - 1 Specifications

Electrical specifications			ELBX12E9W
Wiring connections	Communication cable	Quantity	3+GRD
		Remark	1.5 mm²
	Electric meter	Quantity	2
		Remark	Minimum 0.75 mm² (5VDC 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 mm² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity	Prewired
		Remark	Select diameter & type according to national & local regulations
	For connection with R6T	Quantity	2
		Remark	Minimum 0.75 mm²
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with M2S	Quantity	2
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²/ See note 8
	For connection with optional FWXV* (demand input and output)	Quantity	4
		Remark	100 mA, minimum 0.75 mm²

(1)Operation area is extended to lower flow rates depending on operation mode - refer to ESP curve. |
(2)Excluding the water volume in the unit. This volume will guarantee suficient defrost energy for all applications, however, this volume can be multiplied by 0,66 if the heating sepoint is ≥ 45° C (eg. Fan coils) |
(3)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°. |
(4)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. Sound power level is an absolute value that a so |
(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. |
Select diameter and type according to national and local regulations

3 Electrical data

3 - 1 Electrical Data

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

* 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·
  - Minim
- Measurement type (depending on installation)
  - Single-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
Normal kWh rate power supply										
Electrical meter type	1~	1	1	-	1	-	-	1	-	-
	3~ balanced	-	-	-	-	-	-	-	-	-
	3~ unbalanced	-	-	1	-	1	1	-	1	1
Preferential kWh rate power supply										
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

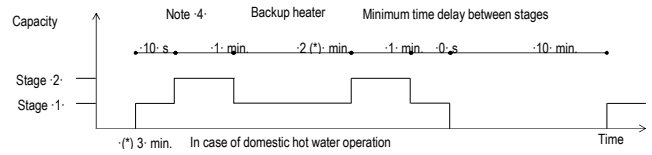
3 - 1 Electrical Data

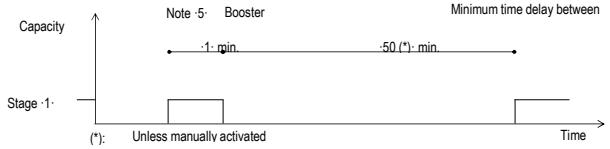
ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W
ELVH-E6V
ELVH-E9W
ELVX-E6V
ELVX-E9W
ELVZ-E6V
ELVZ-E9W

Electrical specifications of the backup heaters and booster heaters

Backup heater	Type					**6V**					**9W**				
	Capacity setting				[kW]	**2 - 4**	**2 - 6**	**·2-4· (in case of emergency: ·2·**		**6**	**3 - 6**	**3 - 9**	**·3 - 6· (in case of**	
	Capacity stage · ·					**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**
	Capacity stage ·1·				kW	**2**	**2**	**2**	**2**	**6**	**3**	**3**	**3**	**3**
	Capacity stage ·2·				kW	**4**	**6**	**4**	**6**	**-**	**6**	**9**	**6**	**9**
	Minimum time delay between stages					**Note ·4·**					**Note ·4·**			
	Power supply	Phase				1~				3~	3~			
	(1)	Frequency			Hz	50								
		Voltage			V	230 +-10%					400 +-10%			
		Nominal running current			A	17,4	26,1	17,4	26,1	15	8,7	13	8,7	13
	Current	Zmax (backup heater)	(2)										-	
					Complex	0,22				-	-			
		Minimum Ssc value			kVA	(3)					-			
Booster heater (optional)(·* KHW*· models)	Capacity setting				kW	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·	A	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·	A					22,5 (15 + 7,5)	16,2 (8,7+7,5)	20,5 (13+7,5)	16,2 (8,7+7,5)	20,5 (13+7,5)
	Minimum Ssc value	Backup heater ·+·	Booster heater ·+ EK*V3·		kVA	(3)								
			Booster heater ·+ EK*Z2·		kVA	-				(3)	-	(3)	-	(3)

Notes	(1)	The above-mentioned power supply of the hydrobox is for the backup heater only. The optional domestic hot water tank has a separate power supply.
	(2)	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





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4 Combination table

4 - 1 Combination Table

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W

Factory-mounted equipment for ·ELB(H/X)12EF*·

Description	ELB(H/X)12EF*	
Heating only model ·ELBH·	6V (8)	9W (8)
Reversible model ·ELBX·	6V (8)	9W (8)
Backup heater ·2-4-6kW 1N~230 V·	o	-
Backup heater ·2-4-6kW 3~230 V·	o	-
Backup heater ·3-6-9kW 3N~400 V·	-	o

Outdoor combination table for ·ELB(H/X)12EF*·

Description		ERRA08EA(V3/W1)	ERRA10EA(V3/W1)	ERRA12EA(V3/W1)
ELBH12EF*	Heating only	o	o	o
ELBX12EF*	Reversible	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

Kit availability for indoor units

Reference	Description		ELB*12EF*	
ELBH*	Heating only indoor unit		6V	9W
ELBX*	Reversible indoor unit		6V	9W
EKRP1HBAA	Digital I/O PCB	*(1) (2)	o	o
EKRP1AHTA	Demand PCB	*(3)	o	o
BRC1HHDA	Simplified user interface		o	o
EKPCCAB4	PC cable	*(4)	o	o
EKHWS(P)150D3V3	Domestic hot water tank ·150 l 1~230 V·		o	o
EKHWS(P)180D3V3	Domestic hot water tank ·180 l 1~230 V·		o	o
EKHWS(P)200D3V3	Domestic hot water tank ·200 l 1~230 V·		o	o
EKHWS(P)250D3V3	Domestic hot water tank ·250 l 1~230 V·		o	o
EKHWS(P)300D3V3	Domestic hot water tank ·300 l 1~230 V·		o	o
EKHWP500B**A**	Domestic hot water tank with solar connection	*(9)(10)	o	o
EKHWP500PB**A**	Domestic hot water tank with solar connection	*(9)(10)	o	o
EKHWP300B**A**	Domestic hot water tank with solar connection	*(9)(10)	o	o
EKHWP300PB**A**	Domestic hot water tank with solar connection	*(9)(10)	o	o
EKHY3PART	Third-party tank connection kit for thermistor pocket		o	o
EKHY3PART2	Third-party tank connection kit for thermostat contact		o	o
EKMIKPOA	Bizone kit		o	o
EKMIKPHA	Bizone kit		o	o
EKMIKHMA	Hydraulics – mixed pump group	*(13)	o	o
EKMIKHUA	Hydraulics – unmixed pump group	*(13)	o	o
EKMIKBVA	Balancing vessel		o	o
EKMIKDIA	Distributor for balancing vessel	*(14)	o	o
KRCS01-1	Remote indoor sensor	*(5)	o	o
EKRSCA1	Remote sensor for outdoor	*(5)	o	o
EKCC8-W	Universal centralised user interface		o	o
DCOM-LT/IO	DCOM gateway		o	o
DCOM-LT/MB	DCOM gateway		o	o
EKHBCONV	Conversion kit: heating only to reversible.		o	o
BRP069A71	WLAN module	*(12)	o	o
BRP069A62	LAN module	*(12)	o	o
EKRELSG	Relay for Smart Grid		o	o
ESAE04A01*	Daikin Residential Controller		o	o

Reference	Description		ELB*12EF*	
ELBH*	Heating only indoor unit		6V	9W
ELBX*	Reversible indoor unit		6V	9W
FWXV10-15-20ATV3	Heat pump convector	*(6)	o	o
FWXT10-15-20ATV3	Heat pump convector	*(6)	o	o
FWXM10-15-20ATV3	Heat pump convector	*(6)	o	o
EKVKHPC	Heat pump convector valve kit	*(6)	o	o
EKRTWA	Wired room thermostat		o	o
EKRTRB	Wireless room thermostat		o	o
EKRTETS	External sensor room thermostat	*(7)	o	o
EKWUFHTA1V3	Multi-zoning base unit 230 V	*(11)	o	o
EKWCTRDI1V3	Digital thermostat 230 V	*(11)	o	o
EKWCTRAN1V3	Analogue thermostat 230 V	*(11)	o	o
EKWCVATR1V3	Actuator 230 V	*(11)	o	o

Kit availability for domestic hot water tanks

Reference	Description	*KHWP*			
KHWP	Domestic hot water tank with solar connection	500BA o	500PBA o	300BA	300PBA o
*KSRPS4A	Solar pump station			o	
EKEPRHLT3HX	Dedicated connection kit available.			o	o
EKEPRHLT5H	Heating only indoor unit	o	o		
EKEPRHLT5X	Only for reversible models	o	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 convector is installed on a reversible model (not mandatory for heating only models).
(7) ·EKRTETS· can only be used in combination with ·*KRTRB·
(8) The backup heater capacity depends on a user interface setting.
(9) Solar pump station
(10) Dedicated connection kit available: ·EKEP*·.
(11) Multi-zoning wired controls
(12) 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.
(13) Only possible in combination with ·EKMIKPOA·
(14) Only possible in combination with ·EKMIKBVA· and ·EKMIKPHA· or ·EKMIKHUA·

Remark

Other combinations than mentioned in this combination table are prohibited.

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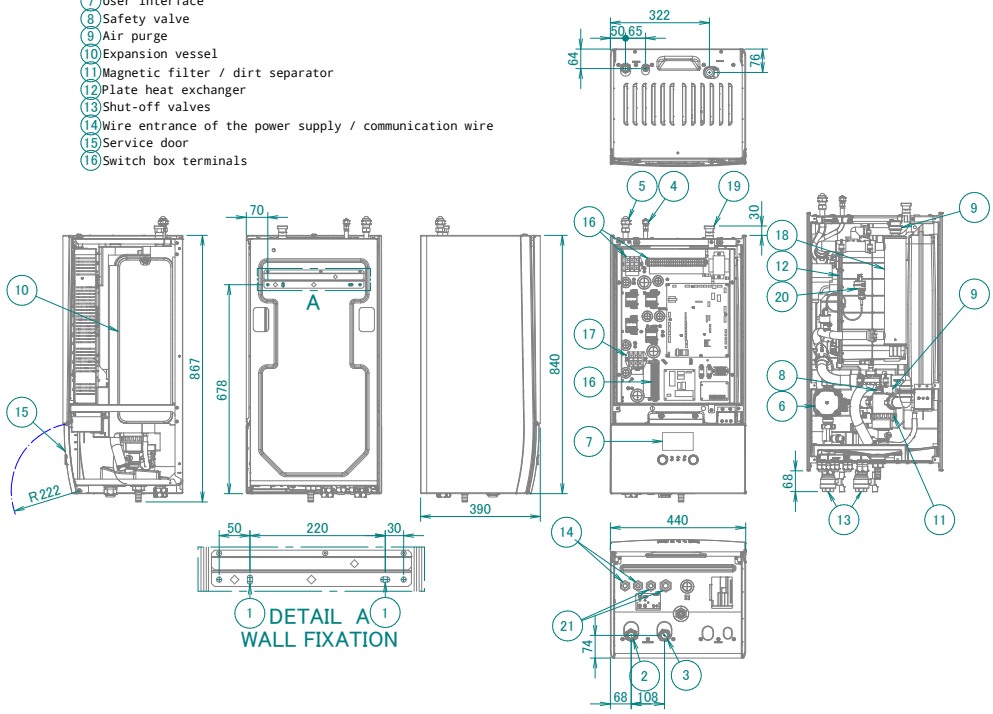
5 Dimensional drawings

5 - 1 Dimensional Drawings

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W

1. Holes ·Ø8.5· for wall fixation
2. Water out connection ·(1" F BSP)·
3. Water in connection ·(1" F BSP)·
4. Liquid pipe connection ·Ø 6.35· flare
5. Gas pipe connection ·Ø15.9· flare
6. Pump
7. User interface
8. Safety valve
9. Air purge
10. Expansion vessel
11. Magnetic filter / dirt separator
12. Plate heat exchanger
13. Shut-off valves
14. Wire entrance of the power supply / communication wire
15. Service door
16. Switch box terminals
17. Switch box terminals for the domestic hot water tank (option)
18. Backup heater
19. Chimney ··
20. Space heating water pressure sensor
21. Options



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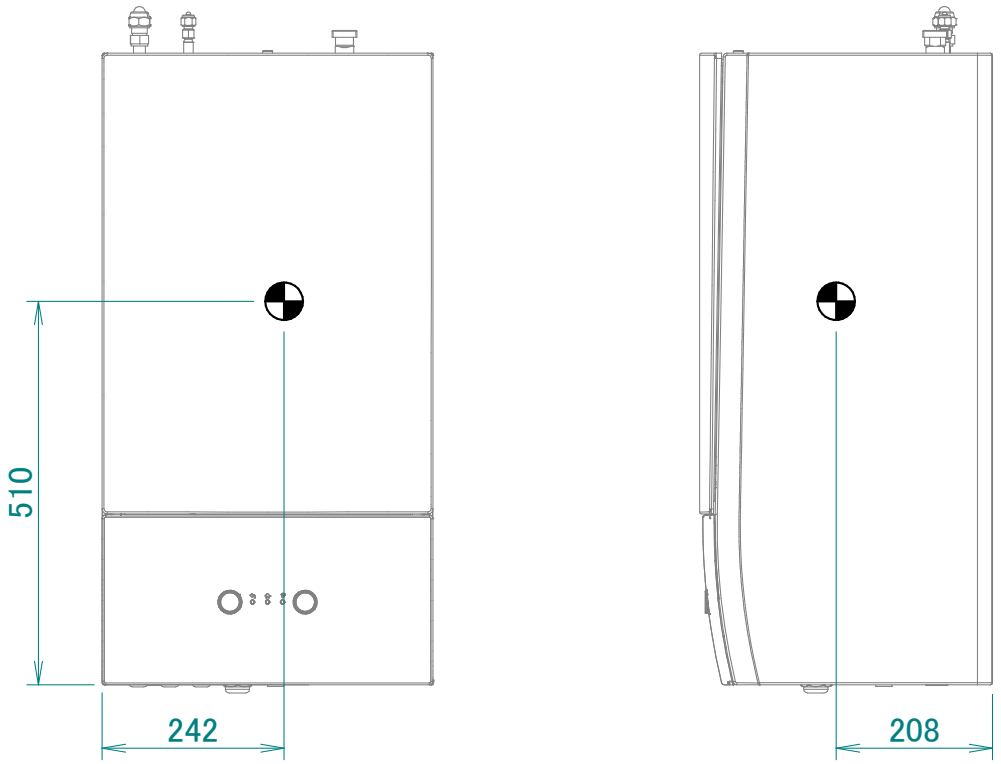
6 Centre of gravity

6 - 1 Centre of Gravity

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W



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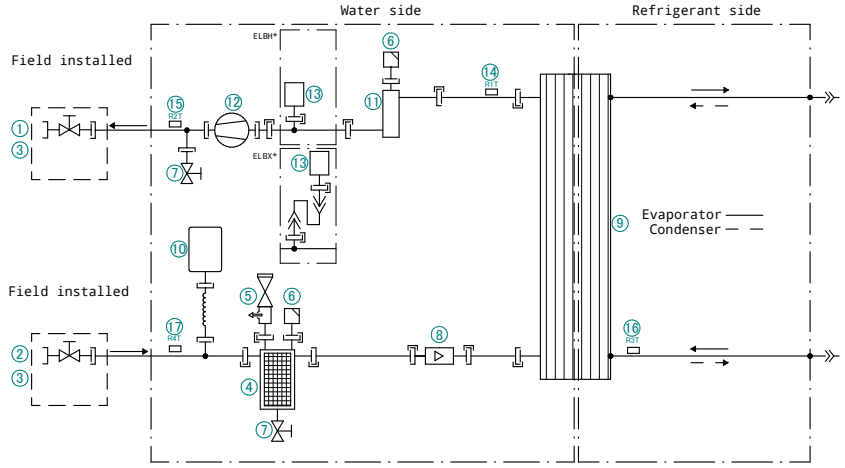
7 Piping diagrams

7 - 1 Piping Diagrams

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W

Screw connection	Brazed connection
Quick coupling	Flare connection



1. Space heating - water OUT
2. Space heating - water IN
3. Shut-off valve
4. Magnetic filter / dirt separator
5. Safety valve
6. Air purge
7. Drain valve
8. Flow sensor
9. Plate heat exchanger
10. Expansion vessel
11. Backup heater
12. Pump
13. Space heating water pressure sensor
14. R1T-Outlet water heat exchanger thermistor
15. R2T-Outlet water backup heater thermistor
16. R3T-Thermistor (heat exchanger, liquid pipe)
17. R4T-Inlet water thermistor

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NOTES to go through before starting the unit

X1M	: Main terminal	X6M	: BUH Power supply terminal
X2M	: Field wiring terminal for AC	X7M, X8M	: BSH Power supply terminal
X5M	: Field wiring terminal for DC	X10M	: Smartgrid terminal
—— —— ——	: Earth wiring		
– – – – – –	: Field supply		
(1)	: Several wiring possibilities		
▭	: Option	▭	: Not mounted in switch box
▭	: Wiring depending on model	▭	: PCB

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

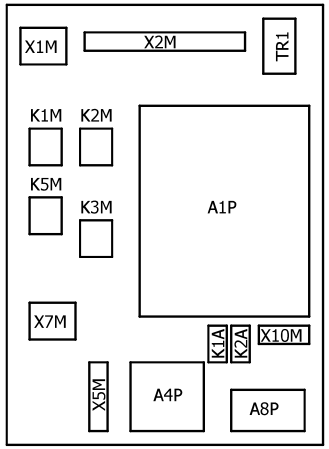
Backup heater power supply
- ☐ 6T1 (3~, 230V, 6kW)
- ☐ 6V3 (1N~, 230V, 6kW)
- ☐ 6WN/9WN (3N~, 400V, 6/9kW)

User installed options:
- ☐ LAN adapter
- ☐ Domestic hot water tank
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Digital I/O PCB
- ☐ Demand PCB
- ☐ Safety thermostat
- ☐ Smartgrid kit
- ☐ WLAN adapter module
- ☐ WLAN cartridge
- ☐ Bizone mixing kit

Main LWT:
- ☐ On/OFF thermostat (wired)
- ☐ On/OFF thermostat (wireless)
  - ☐ Ext. thermistor
- ☐ Heat pump convector

Add LWT:
- ☐ On/OFF thermostat (wired)
- ☐ On/OFF thermostat (wireless)
  - ☐ Ext. thermistor
- ☐ Heat pump convector

POSITION IN SWITCH BOX



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LEGEND

* : optional # : field supply

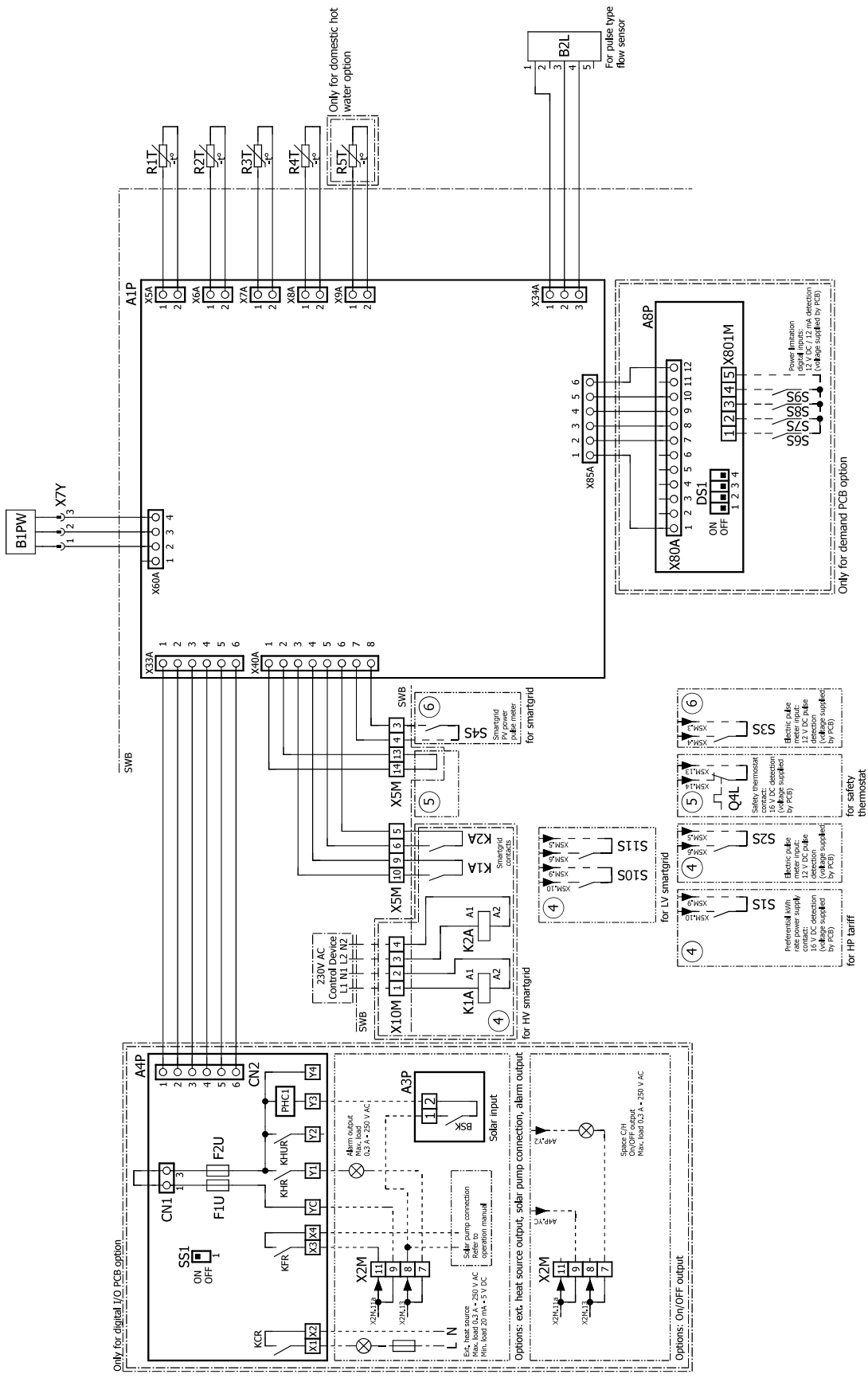
Translation can be found in the installation manual.

Part n°		Description
A1P		main PCB
A2P	*	On/OFF thermostat (PC=power circuit)
A3P	*	heat pump convector
A4P	*	digital I/O PCB
A8P	*	demand PCB
A9P		status indicator
A11P		MMI main PCB
A13P	*	LAN adapter
A14P	*	user interface PCB
A15P	*	receiver PCB (wireless On/OFF thermostat)
A20P	*	WLAN module
A30P	*	Bizone mixing kit PCB
B2L		flow sensor
B1PW		water pressure sensor
BSK (A3P)		solar pump station relay
CN* (A4P)	*	connector
DS1 (A8P)	*	dipswitch
E1H		backup heater element (1 kW)
E2H		backup heater element (2 kW)
E4H	*	booster heater (3 kW)
E*P (A9P)		indication LED
F1B	#	overcurrent fuse backup heater
F2B	#	overcurrent fuse booster heater
F1T		thermal fuse backup heater
F1U, F2U (A4P)	*	fuse 5 A 250 V for digital I/O PCB
FU1 (A1P)		fuse T 6.3 A 250 V for PCB
K1A, K2A	*	high voltage smartgrid relay
K1M, K2M		contactor backup heater
K3M	*	contactor booster heater
K5M		safety contactor BUH
K*R (A1P-A4P)		relay on PCB
M1P		main supply pump
M2P	#	domestic hot water pump
M2S	#	2 way valve for cooling mode
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
Q2L	*	thermal protector booster heater
Q4L	#	safety thermostat
Q*DI	#	earth leakage circuit breaker
R1H (A2P)	*	humidity sensor
R1T (A1P)		outlet water heat exchanger thermistor
R1T (A2P)	*	ambient sensor On/OFF thermostat
R1T (A14P)	*	ambient sensor user interface
R2T (A1P)		outlet backup heater thermistor
R2T (A2P)	*	external sensor (floor or ambient)
R3T		refrigerant liquid side thermistor
R4T		inlet water thermistor
R5T	*	domestic hot water thermistor
R6T	*	external indoor or outdoor ambient thermistor
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
SS1 (A4P)	*	selector switch
SW1~2 (A12P)		turn buttons
SW3~5 (A12P)		push button
TR1		power supply transformer
X6M	#	BUH power supply terminal strip
X6M	*	BSH power supply connector
X7M, X8M	*	BSH power supply terminal strip
X10M	*	smartgrid power supply terminal strip
X*, X*A, X*H*, X*Y		connector
X*M		terminal strip

8 Wiring diagrams

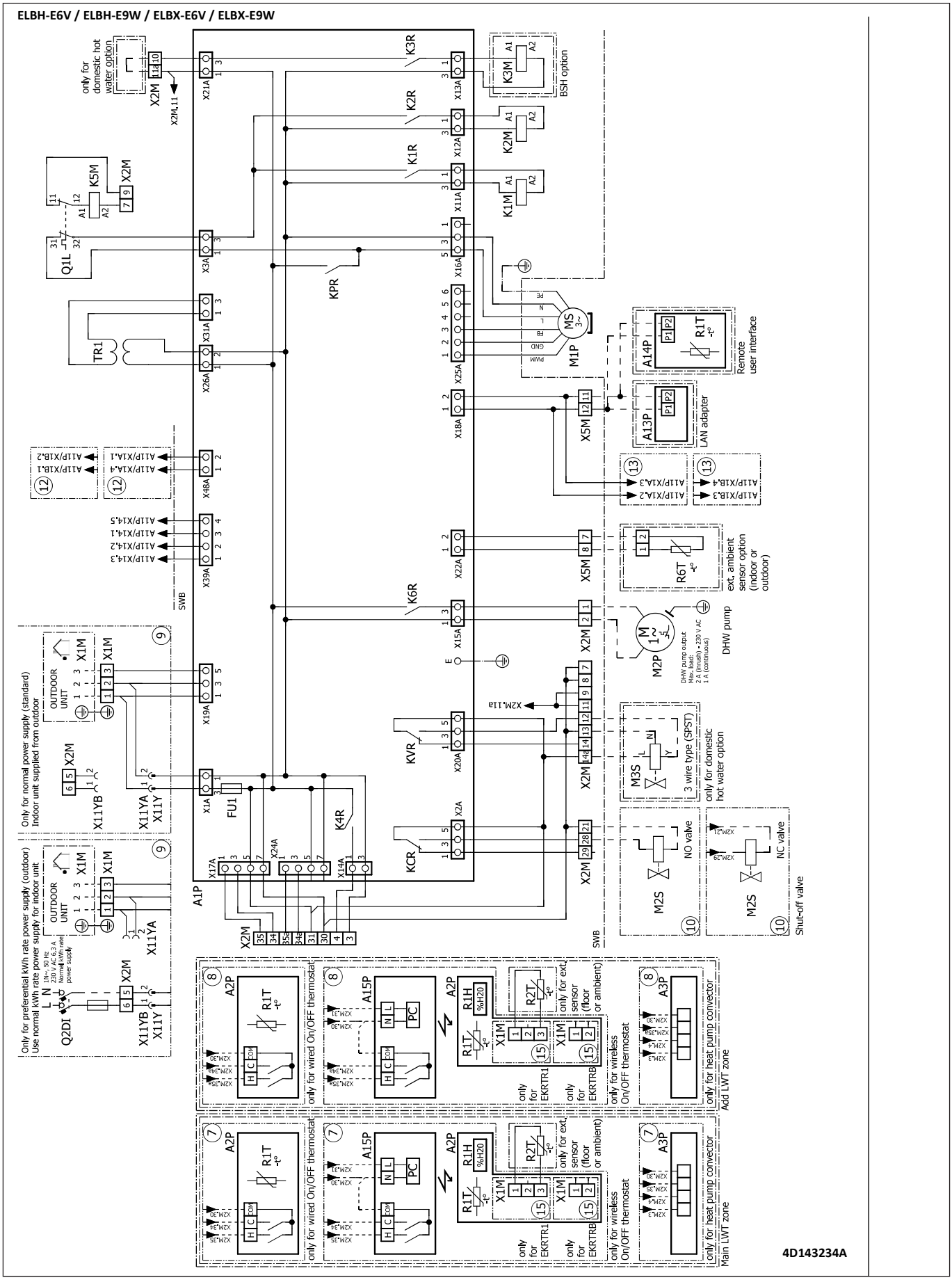
8 - 2 Control Circuit

ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W



8 Wiring diagrams

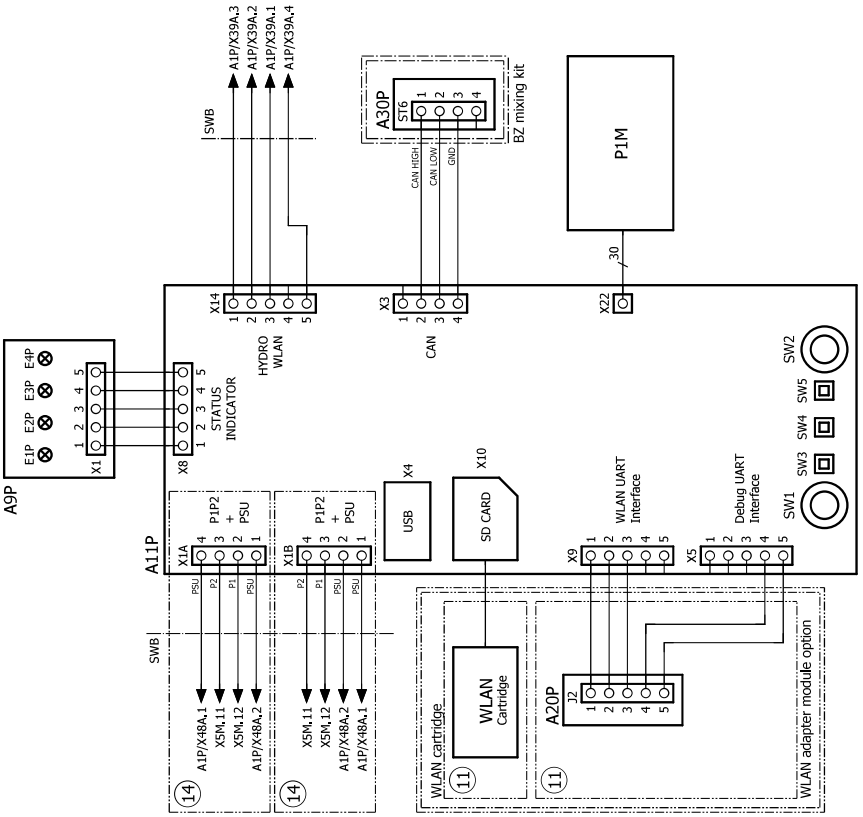
8 - 2 Control Circuit



8 Wiring diagrams

8 - 2 Control Circuit

ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W



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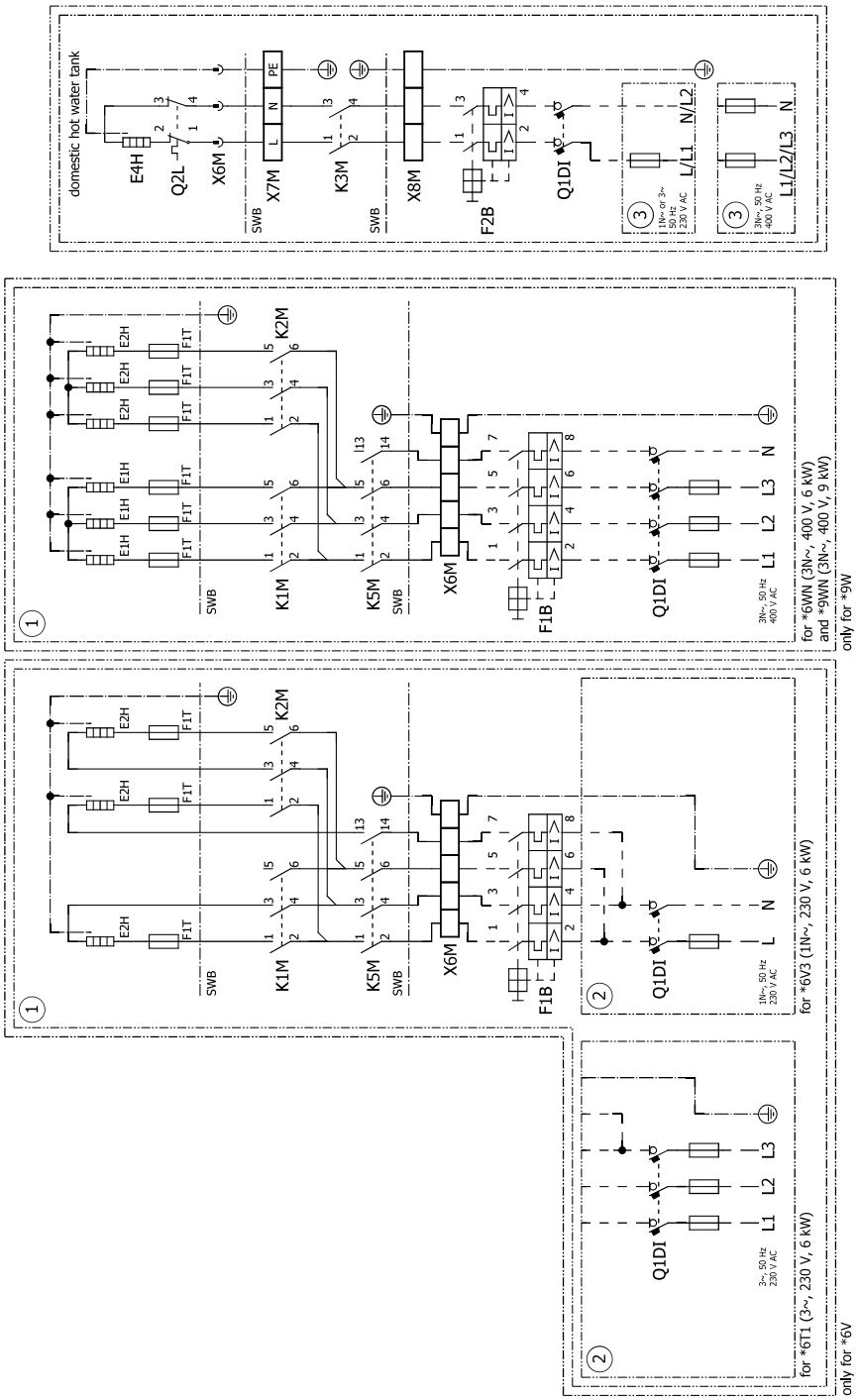
8 Wiring diagrams

8 - 3 Power Supply, Back-up Heater

ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W



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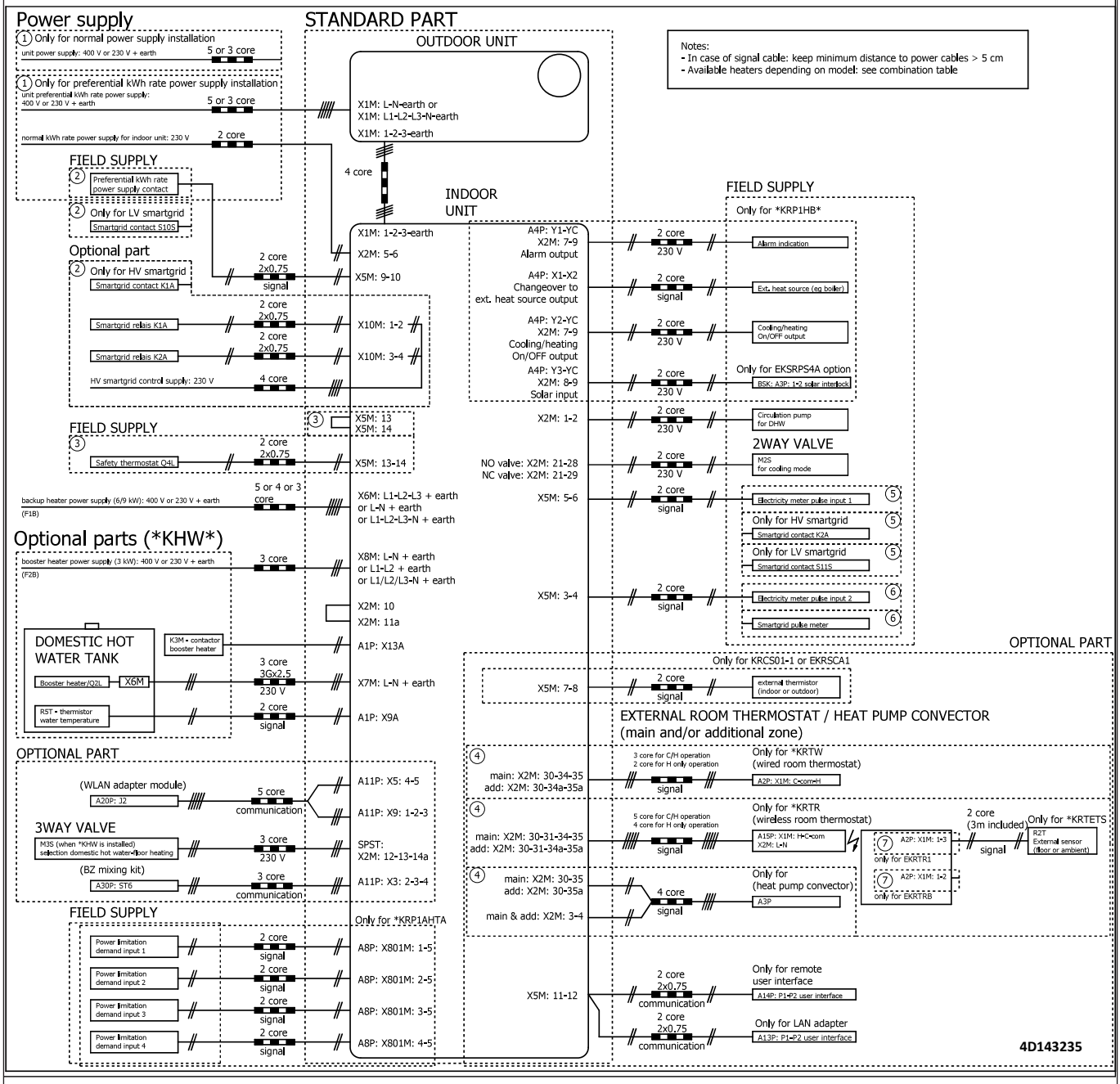
9 External connection diagrams

9 - 1 External Connection Diagrams

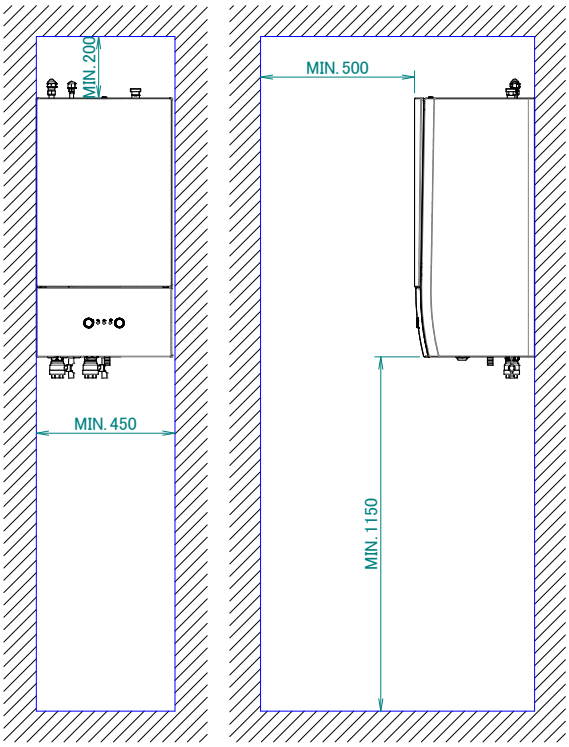
ELBH-E6V / ELBH-E9W / ELBX-E6V / ELBX-E9W



10 Installation

10 - 1 Installation Method

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W



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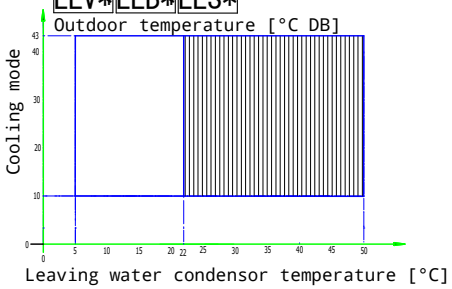
11 Operation range

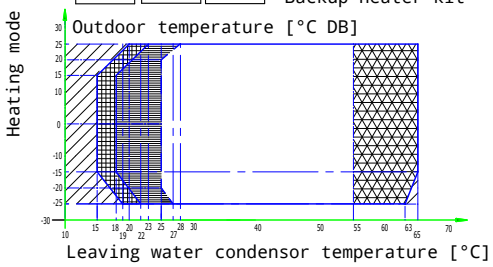
11 - 1 Operation Range

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

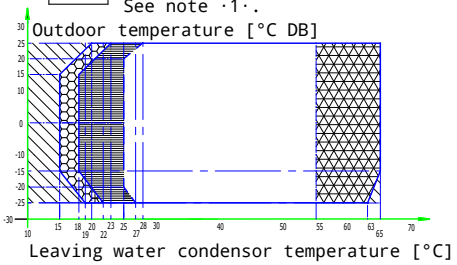
ELV*ELB*ELS*



ELV*ELB*ELS* Backup heater
Backup heater kit



ELS* No backup heater
With tank preheating
See note ·1·.



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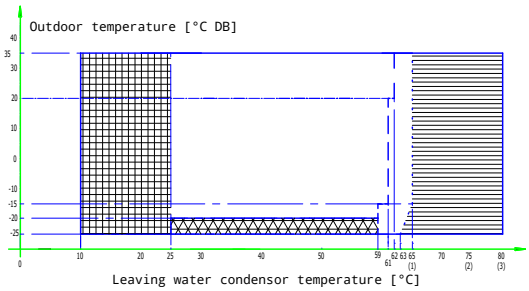
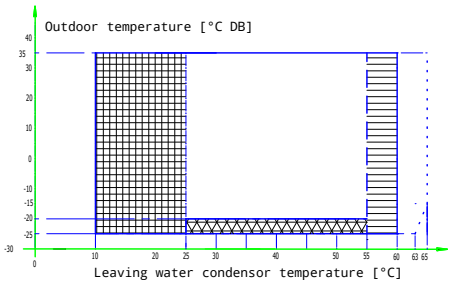
ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-E9W
ELSH-E
ELSHB-E
ELSX-E
ELSXB-E
ELVH-E6V
ELVH-E9W
ELVX-E6V
ELVX-E9W
ELVZ-E6V
ELVZ-E9W

Domestic hot water heating mode

ELV* + ELS* + EKHWP* + EKHWS*200* / EKHWS*250* / EKHWS*300*
+
Third-party with identical specifications as ·EKHWS*200*·



EKHWS*150* / EKHWS*180*
+
Third-party with identical specifications as ·EKHWS*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 ·EKHWS*· and ·ELB*· indoor units / ·ELS*12*· indoor units only
  (3) Combination of ·EKHWP*· 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

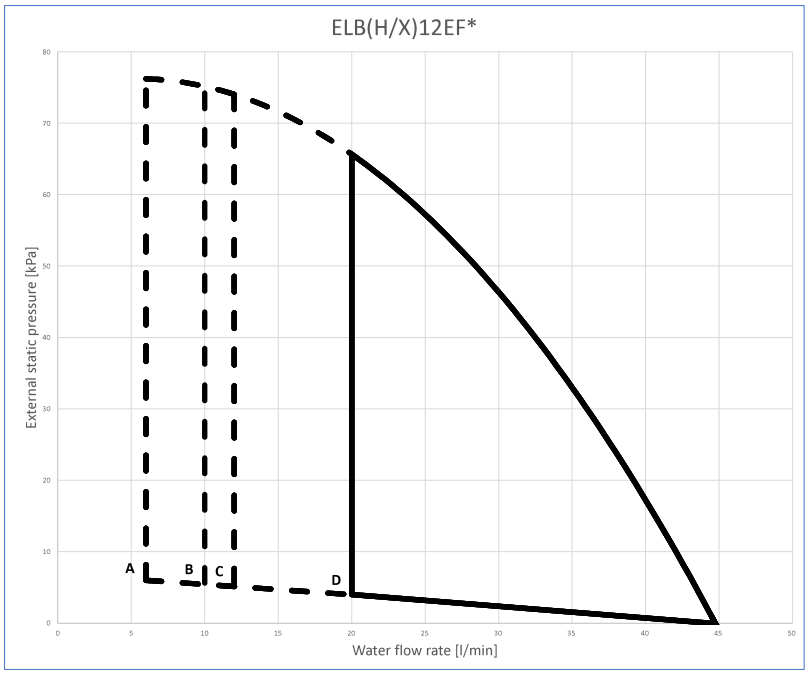
1.In restricted power supply mode (·EKHW*· only), the outdoor unit, booster heater and backup heater can only operate separately.
2.Third-party with identical specifications as ·EKHWS*150*·
Coil surface >·1.05·m² and <·3.7·m²
Tank thermistor and booster heater above heat pump coil.
3.Third-party with identical specifications as ·EKHWS*200*·
Coil surface >·1.8·m² and <·3.7·m²
Tank thermistor and booster heater above heat pump coil.

3D142810

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

ELBH-E6V
ELBH-E9W
ELBX-E6V
ELBX-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 qualitiy must be according to EU directive 2020/2184.**

3D146896

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