Daikin Altherma low temperature split Technical Data EBSH-D / EBSHB-D / EBSX-D / EBSXB-D

EEDEN23

TABLE OF CONTENTS
EBSH-D / EBSHB-D / EBSX-D / EBSXB-D

1 Features

1 - 1 EBSHB-D, EBSX-D, EBSH-D, EBSXB-D

Floor standing air to water heat pump for bivalent heating and hot water with thermal solar support

- Maximum use of renewable energy: uses heat pump technology for heating and solar support for space heating and domestic hot water production
- Maintenance-free tank: no corrosion, anode, scale or lime deposits, and no loss of water through safety valve
- Fresh water principle: hygienic water, with no need for thermal legionella disinfection
- W-LAN module and cartridge compatible
- Wired remote control for pump station EKSRDS1A, connectable to pressurised solar system

Fresh hot water

Solar ready

Onecta app (optional)

Voice control

2 Specifications

2 - 1 Specifications

Technical specifications				EBSH11P30D	EBSH11P50D	EBSH16P30D	EBSH16P50D
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)			
	Material			Impact resistant polypropylene			
Dimensions	Unit	Height	mm	1,893	1,910	1,893	1,910
		Width	mm	594	792	594	792
		Depth	mm	680	817	680	817
	Packed unit	Height	mm	2,029	2,046	2,029	2,046
		Width	mm	800			
		Depth	mm	900			
Weight	Unit		kg	93	114	93	114
	Packed unit		kg	105	126	105	126
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board			
	Weight		kg	12			
PED	Category			Category II			
	Most critical part	Name		Plate heat exchanger			
		Ps*V	Bar*l	83			
Pump	Type			Grundfos UPM4L K 20-75 CHBL 3 RT		Grundfos UPML 20-105 CHBL 3H RT	
	Nr of speeds			PWM			
	IP class			IPX4D		IPX2D	
	Power input		W	75		140	
Water side Heat exchanger	Type			Plate heat exchanger			
	Model			ACH43-90AH-F			
	Quantity			1			
	Water volume		l	2.16			
	Insulation material			EPP			
Tank	Water volume		l	294	477	294	477
	Material			Polypropylen			
	Maximum water temperature		°C	85.0			
	Insulation	Material		HFC-free Polyurethane foam			
		Heat loss	kWh/24h	1.5 (1)	1.7 (1)	1.5 (1)	1.7 (1)
	Standing heat loss	S	W	64	72	64	72
	Specific heat loss	U Asb, S, a	W/K	1.43	1.59	1.43	1.59
	Storage volume	V	l	294	477	294	477
	Energy efficiency class			B			
	Vbu (Solar, BUH)	Volume of the non-solar storage tank	l	290	464	290	464
Heat exchanger	Quantity			2			
	Charging	Quantity		1			
Heat exchanger	Charging	Tube material		Stainless steel (1.4404)			
		Face area	m^2	3.26	3.40	3.26	3.40
		Internal coil volume	l	16			
		Operating pressure	bar	3.0			
	Domestic hot water	Face area	m^2	5.60	7.50	5.60	7.50
		Internal coil volume	l	27.3	36.2	27.3	36.2
		Operating pressure	bar	10.0			
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" (male)			
	Piping material			Brass (CW614N/CW617N)			
	Safety valve		bar	3			
	Manometer			Digital			
	Drain valve / fill valve			Yes			
	Shut off valve			Yes			
	flowswitch			No			
	Air purge valve			Yes			
	Pressure	Heating Max.	bar	3			
Water circuit - space heating side (main zone)	Air purge valve			Yes			
	Drain valve / fill valve			Yes			
	Manometer			Yes			
	Piping connections diameter		inch	G 1 (MALE)			
	Safety valve		bar	3			
	Shut off valve			Yes			
Water circuit - Domestic hot water side	Piping material			Brass(CW617N)			
	Piping connections	Cold water in / Hot water out	inch	G 1" (male)			
Refrigerant	Type			R-32			
	Charge		kg	3.80			
	GWP			675.0			

2 Specifications

2 - 1 Specifications

Technical specifications					EBSH11P30D	EBSH11P50D	EBSH16P30D	EBSH16P50D
Refrigerant circuit	Gas side diameter			mm	15.88			
	Liquid side diameter			mm	9.52			
	High pressure side	Design pressure		bar	1			
Sound power level	Nom.			dBA	44.7		49.0	
Sound pressure level	Nom.			dBA	36.8		40.3	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
Operation range	Heating	Water side	Max.	°C	0 (2)			
	Indoor installation	Ambient	Min.	°CDB	5			
			Max.	°CDB	35			
	Cooling	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Domestic hot water	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
Control systems	Class of temperature control				II			
	Contribution to seasonal space heating efficiency			%	2.0			
Installation place					Indoor			

Electrical specifications				EBSH11P30D	EBSH11P50D	EBSH16P30D	EBSH16P50D
Power supply	Phase			1~			
	Frequency		Hz	50			
	Voltage		V	230			
	Voltage range	Min.	%	10			
		Max.	%	10			
IP class	IP			IPX4			

(1)Heatloss according to EN12897 |
(2)Refer to drawing operation limits

Technical specifications				EBSHB11P30D	EBSHB11P50D	EBSHB16P30D	EBSHB16P50D
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)			
	Material			Impact resistant polypropylene			
Dimensions	Unit	Height	mm	1,893	1,910	1,893	1,910
		Width	mm	594	792	594	792
		Depth	mm	680	817	680	817
	Packed unit	Height	mm	2,029	2,046	2,029	2,046
		Width	mm	800			
		Depth	mm	900			
Weight	Unit		kg	94	117	94	117
	Packed unit		kg	106	129	106	129
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board			
	Weight		kg	12			
PED	Category			Category II			
	Most critical part	Name		Plate heat exchanger			
		Ps*V	Bar*l	83			
Pump	Type			Grundfos UPM4L K 20-75 CHBL 3 RT		Grundfos UPML 20-105 CHBL 3H RT	
	Nr of speeds			PWM			
	IP class			IPX4D		IPX2D	
	Power input		W	75		140	
Water side Heat exchanger	Type			Plate heat exchanger			
	Model			ACH43-90AH-F			
	Quantity			1			
	Water volume		l	2.16			
	Insulation material			EPP			
Tank	Water volume		l	294	477	294	477
	Material			Polypropylen			
	Maximum water temperature		°C	85.0			
	Insulation	Material		HFC-free Polyurethane foam			
		Heat loss	kWh/24h	1.5 (1)	1.7 (1)	1.5 (1)	1.7 (1)
	Standing heat loss	S	W	64	72	64	72
	Specific heat loss	U Asb, S, a	W/K	1.43	1.59	1.43	1.59
	Storage volume	V	l	294	477	294	477
	Energy efficiency class			B			
	Vbu (Solar, BUH)	Volume of the non-solar storage tank	l	290	464	290	464

2 Specifications

2 - 1 Specifications

Technical specifications					EBSHB11P30D	EBSHB11P50D	EBSHB16P30D	EBSHB16P50D
Heat exchanger	Quantity				3			
	Charging	Quantity			1			
Heat exchanger	Charging	Tube material			Stainless steel (1.4404)			
		Face area		m^2	3.26	3.40	3.26	3.40
		Internal coil volume		l	16			
		Operating pressure		bar	3.0			
	Domestic hot water	Face area		m^2	5.60	7.50	5.60	7.50
		Internal coil volume		l	27.3	36.2	27.3	36.2
		Operating pressure		bar	10.0			
	Pressurised solar	Face area		m^2	0.74	1.83	0.74	1.83
		Internal coil volume		l	3.90	9.07	3.90	9.07
		Operating pressure		bar	6.0			
		Quantity			1			
		Tube material			Stainless steel (1.4404)			
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" (male)			
	Piping material				Brass (CW614N/CW617N)			
	Safety valve			bar	3			
	Manometer				Digital			
	Drain valve / fill valve				Yes			
	Shut off valve				Yes			
	flowswitch				No			
	Air purge valve				Yes			
	Pressure	Heating	Max.	bar	3			
Water circuit - space heating side (main zone)	Air purge valve				Yes			
	Drain valve / fill valve				Yes			
	Manometer				Yes			
	Piping connections diameter			inch	G 1 (MALE)			
	Safety valve			bar	3			
	Shut off valve				Yes			
Water circuit - Domestic hot water side	Piping material				Brass(CW617N)			
	Piping connections	Cold water in / Hot water out		inch	G 1" (male)			
Piping connections	Pressurised solar heat exchanger			inch	G 1" (male)			
Refrigerant	Type				R-32			
	Charge			kg	3.80			
	GWP				675.0			
Refrigerant circuit	Gas side diameter			mm	15.88			
	Liquid side diameter			mm	9.52			
Refrigerant circuit	High pressure side	Design pressure		bar	1			
Sound power level	Nom.			dBA	44.7		49.0	
Sound pressure level	Nom.			dBA	36.8		40.3	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Indoor installation	Ambient	Min.	°CDB	5			
			Max.	°CDB	35			
	Cooling	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Domestic hot water	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
Control systems	Class of temperature control				II			
	Contribution to seasonal space heating efficiency			%	2.0			
Installation place					Indoor			

Electrical specifications				EBSHB11P30D	EBSHB11P50D	EBSHB16P30D	EBSHB16P50D
Power supply	Phase			1~			
	Frequency		Hz	50			
	Voltage		V	230			
	Voltage range	Min.	%	10			
		Max.	%	10			
IP class	IP			IPX4			

(1)Heatloss according to EN12897 |
(2)Refer to drawing operation limits

2 Specifications

2 - 1 Specifications

Technical specifications				EBSX11P30D	EBSX11P50D	EBSX16P30D	EBSX16P50D
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)			
	Material			Impact resistant polypropylene			
Dimensions	Unit	Height	mm	1,893	1,910	1,893	1,910
		Width	mm	594	792	594	792
		Depth	mm	680	817	680	817
	Packed unit	Height	mm	2,029	2,046	2,029	2,046
		Width	mm	800			
		Depth	mm	900			
Weight	Unit		kg	93	114	93	114
	Packed unit		kg	105	126	105	126
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board			
	Weight		kg	12			
PED	Category			Category II			
	Most critical part	Name		Plate heat exchanger			
		Ps*V	Bar*l	83			
Pump	Type			Grundfos UPM4L K 20-75 CHBL 3 RT		Grundfos UPML 20-105 CHBL 3H RT	
	Nr of speeds			PWM			
	IP class			IPX4D		IPX2D	
	Power input		W	75		140	
Water side Heat exchanger	Type			Plate heat exchanger			
	Model			ACH43-90AH-F			
	Quantity			1			
	Water volume		l	2.16			
	Insulation material			EPP			
Tank	Water volume		l	294	477	294	477
	Material			Polypropylen			
	Maximum water temperature		°C	85.0			
	Insulation	Material		HFC-free Polyurethane foam			
		Heat loss	kWh/24h	1.5 (1)	1.7 (1)	1.5 (1)	1.7 (1)
	Standing heat loss	S	W	64	72	64	72
	Specific heat loss	U Asb, S, a	W/K	1.43	1.59	1.43	1.59
	Storage volume	V	l	294	477	294	477
	Energy efficiency class			B			
	Vbu (Solar, BUH)	Volume of the non-solar storage tank	l	290	464	290	464
Heat exchanger	Quantity			2			
	Charging	Quantity		1			
Heat exchanger	Charging	Tube material		Stainless steel (1.4404)			
		Face area	m^2	3.26	3.40	3.26	3.40
		Internal coil volume	l	16			
		Operating pressure	bar	3.0			
	Domestic hot water	Face area	m^2	5.60	7.50	5.60	7.50
		Internal coil volume	l	27.3	36.2	27.3	36.2
		Operating pressure	bar	10.0			
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" (male)			
	Piping material			Brass (CW614N/CW617N)			
	Safety valve		bar	3			
	Manometer			Digital			
	Drain valve / fill valve			Yes			
	Shut off valve			Yes			
	flowswitch			No			
	Air purge valve			Yes			
	Pressure	Heating Max.	bar	3			
Water circuit - space heating side (main zone)	Air purge valve			Yes			
	Drain valve / fill valve			Yes			
	Manometer			Yes			
	Piping connections diameter		inch	G 1 (MALE)			
	Safety valve		bar	3			
	Shut off valve			Yes			
Water circuit - Domestic hot water side	Piping material			Brass(CW617N)			
	Piping connections	Cold water in / Hot water out	inch	G 1" (male)			
Refrigerant	Type			R-32			
	Charge		kg	3.80			
	GWP			675.0			

2 Specifications

2 - 1 Specifications

Technical specifications					EBSX11P30D	EBSX11P50D	EBSX16P30D	EBSX16P50D
Refrigerant circuit	Gas side diameter			mm	15.88			
	Liquid side diameter			mm	9.52			
	High pressure side	Design pressure		bar	1			
Sound power level	Nom.			dBA	44.7		49.0	
Sound pressure level	Nom.			dBA	36.8		40.3	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
Operation range	Heating	Water side	Max.	°C	0 (2)			
	Indoor installation	Ambient	Min.	°CDB	5			
			Max.	°CDB	35			
	Cooling	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Domestic hot water	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
Control systems	Class of temperature control				II			
	Contribution to seasonal space heating efficiency			%	2.0			
Installation place					Indoor			

Electrical specifications				EBSX11P30D	EBSX11P50D	EBSX16P30D	EBSX16P50D
Power supply	Phase			1~			
	Frequency		Hz	50			
	Voltage		V	230			
	Voltage range	Min.	%	10			
		Max.	%	10			
IP class	IP			IPX4			

(1)Heatloss according to EN12897 |
(2)Refer to drawing operation limits

Technical specifications				EBSXB11P30D	EBSXB11P50D	EBSXB16P30D	EBSXB16P50D
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)			
	Material			Impact resistant polypropylene			
Dimensions	Unit	Height	mm	1,893	1,910	1,893	1,910
		Width	mm	594	792	594	792
		Depth	mm	680	817	680	817
	Packed unit	Height	mm	2,029	2,046	2,029	2,046
		Width	mm	800			
		Depth	mm	900			
Weight	Unit		kg	94	117	94	117
	Packed unit		kg	106	129	106	129
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board			
	Weight		kg	12			
PED	Category			Category II			
	Most critical part	Name		Plate heat exchanger			
		Ps*V	Bar*l	83			
Pump	Type			Grundfos UPM4L K 20-75 CHBL 3 RT		Grundfos UPML 20-105 CHBL 3H RT	
	Nr of speeds			PWM			
	IP class			IPX4D		IPX2D	
	Power input		W	75		140	
Water side Heat exchanger	Type			Plate heat exchanger			
	Model			ACH43-90AH-F			
	Quantity			1			
	Water volume		l	2.16			
	Insulation material			EPP			
Tank	Water volume		l	294	477	294	477
	Material			Polypropylen			
	Maximum water temperature		°C	85.0			
	Insulation	Material		HFC-free Polyurethane foam			
		Heat loss	kWh/24h	1.5 (1)	1.7 (1)	1.5 (1)	1.7 (1)
	Standing heat loss	S	W	64	72	64	72
	Specific heat loss	U Asb, S, a	W/K	1.43	1.59	1.43	1.59
	Storage volume	V	l	294	477	294	477
	Energy efficiency class			B			
	Vbu (Solar, BUH)	Volume of the non-solar storage tank	l	290	464	290	464

2 Specifications

2 - 1 Specifications

Technical specifications					EBSXB11P30D	EBSXB11P50D	EBSXB16P30D	EBSXB16P50D
Heat exchanger	Quantity				3			
	Charging	Quantity			1			
Heat exchanger	Charging	Tube material			Stainless steel (1.4404)			
		Face area		m^2	3.26	3.40	3.26	3.40
		Internal coil volume		l	16			
		Operating pressure		bar	3.0			
	Domestic hot water	Face area		m^2	5.60	7.50	5.60	7.50
		Internal coil volume		l	27.3	36.2	27.3	36.2
		Operating pressure		bar	10.0			
	Pressurised solar	Face area		m^2	0.74	1.83	0.74	1.83
		Internal coil volume		l	3.90	9.07	3.90	9.07
		Operating pressure		bar	6.0			
		Quantity			1			
		Tube material			Stainless steel (1.4404)			
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" (male)			
	Piping material				Brass (CW614N/CW617N)			
	Safety valve			bar	3			
	Manometer				Digital			
	Drain valve / fill valve				Yes			
	Shut off valve				Yes			
	flowswitch				No			
	Air purge valve				Yes			
	Pressure	Heating	Max.	bar	3			
Water circuit - space heating side (main zone)	Air purge valve				Yes			
	Drain valve / fill valve				Yes			
	Manometer				Yes			
	Piping connections diameter			inch	G 1 (MALE)			
	Safety valve			bar	3			
	Shut off valve				Yes			
Water circuit - Domestic hot water side	Piping material				Brass(CW617N)			
	Piping connections	Cold water in / Hot water out		inch	G 1" (male)			
Piping connections	Pressurised solar heat exchanger			inch	G 1" (male)			
Refrigerant	Type				R-32			
	Charge			kg	3.80			
	GWP				675.0			
Refrigerant circuit	Gas side diameter			mm	15.88			
	Liquid side diameter			mm	9.52			
Refrigerant circuit	High pressure side	Design pressure		bar	1			
Sound power level	Nom.			dBA	44.7		49.0	
Sound pressure level	Nom.			dBA	36.8		40.3	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Indoor installation	Ambient	Min.	°CDB	5			
			Max.	°CDB	35			
	Cooling	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
	Domestic hot water	Ambient	Min.	°CDB	0 (2)			
			Max.	°CDB	0 (2)			
		Water side	Min.	°C	0 (2)			
			Max.	°C	0 (2)			
Control systems	Class of temperature control				II			
	Contribution to seasonal space heating efficiency			%	2.0			
Installation place					Indoor			

Electrical specifications				EBSXB11P30D	EBSXB11P50D	EBSXB16P30D	EBSXB16P50D
Power supply	Phase			1~			
	Frequency		Hz	50			
	Voltage		V	230			
	Voltage range	Min.	%	10			
		Max.	%	10			
IP class	IP			IPX4			

(1)Heatloss according to EN12897 |
(2)Refer to drawing operation limits

3 Electrical data

3 - 1 Electrical Data

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D

Electrical specifications of the backup heaters and booster heaters

						EKECBU*3V			EKECBU*6V				EKECBU*9W			
Backup heater	Capacity setting				[kW]	1	1-2	1-2-3	2 - 4	2 - 6	·2-4· (in case of emergency: ·2-6·)		3 - 6	3 - 9	·3 - 6· (in case of emergency: ·3 - 9·)	
	Capacity stage · ·					(4)			2	2	2	2	2	2	2	2
	Capacity stage ·1·				kW				2	2	2	2	3	3	3	3
	Capacity stage ·2·				kW				4	6	4	6	6	9	6	9
	Minimum time delay between stages					-			Note ·5·				Note ·5·			
	Power supply	Phase				1~							3~			
	(1)	Frequency			Hz	50										
		Voltage			V	230 +-10%							400 +-10%			
	Current	Nominal running current			A	4.4	8.7	13.1	17,4	26,1	17,4	26,1	8,7	13	8,7	13
		Zmax (backup heater)	(2)		Ω	-							-			
					Complex	-			0,22				-			
		Minimum Ssc value			kVA	-			(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.

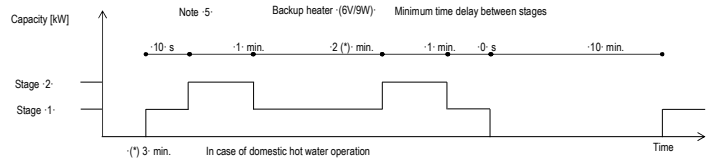
(3) The equipment complies with EN/IEC 61000-3-12.

(4) For the 3V model, the system variably choses from 3 available capacity steps the adequate capacity for the given operating conditions.

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



3D136052

3 Electrical data

3 - 1 Electrical Data

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D

* 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·
  - Minimum OFF time: ·100ms·
- 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		ERLA(11/14/16)D*		
Indoor unit type		EBS*DF		
	Backup heater type (optional)	EKECBU*3V	EKECBU*6V	EKECBU*9W
	Backup heater power supply	1~ 230V	1~ 230V	3~ 400V
	Backup heater configuration	1/2/3 kW	2 / 4 / 6 kW	3 / 6 / 9 kW
		Normal kWh rate power supply		
Electrical meter type	1~	1	1	-
	3~ balanced	-	-	-
	3~ unbalanced	-	-	1
		Preferential kWh rate power supply		
Electrical meter type	1~	2	2	1
	3~ balanced	-	-	-
	3~ unbalanced	-	-	1

4D139051A

4 Combination table

4 - 1 Combination Table

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D

Factory-mounted equipment for -EBS(H/X)*(11/16)P*DF*-

Description	EBS(H/X)*(11/16)P30DF	EBS(H/X)*(11/16)P50DF
Domestic hot water tank -300l integrated-	o	-
Domestic hot water tank -500l integrated-	-	o

Outdoor combination table for -EBS(H/X)*(11/16)P*DF*-

		ERLA11D(A/2)(V3/W1)	ERLA14D(A/2)(V3/W1)	ERLA16D(A/2)(V37/W17)
EBSH*11P(30/50)DF	Heating only indoor unit	o	-	-
EBSX*11P(30/50)DF	Reversible indoor unit	o	-	-
EBSH*16P(30/50)DF	Heating only indoor unit	-	o	o
EBSX*16P(30/50)DF	Reversible indoor unit	-	o	o

Kit availability for indoor units

Reference	Description		EBS*(11/16)P(30/50)DF	EBS*B(11/16)P(30/50)DF
EKECBUAF3V	Inline backup heater 3kW *(16)		Mandatory	o *(17)
EKECBUAF6V	Inline backup heater 6kW *(16)		Mandatory	o *(17)
EKECBUAF9W	Inline backup heater 9kW *(16)		Mandatory	o *(17)
EKECBUCO2AF	Inline BUH connection kit TBM		Mandatory	o *(17)
EKRP1HBAA	Digital I/O PCB	*(1) (2)	-	-
EKRP1AHTA	Demand PCB	*(3)	o	o
BRC1HHDA*	HCI (Human Comfort Interface)		o	o
EKPCCAB4	PC cable	*(4)	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		-	-
DCOM-LT/MB	DCOM gateway		-	-
EKCC8-W	Cascade control		o	o
EKHVCONV4	Conversion kit: heating only to reversible.		-	-
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		-	-
EKRTWA	Wired room thermostat		o	o
EKRTR1, EKRTRB	Wireless room thermostat		o	o
EKRTETS	External sensor room thermostat	*(7)	o	o
EKWUFHTA1V3	Multi-zoning base unit 230 V	*(9)	o	o
EKWCTRDI1V3	Digital thermostat 230 V	*(9)	-	-
EKWCTRAN1V3	Analogue thermostat 230 V	*(9)	-	-
EKWCVATR1V3	Actuator 230 V	*(9)	-	-
EKRELSG	Relay for Smart Grid		o	o
BRP069A61	LAN adapter with solar connectivity		o	o
BRP069A62	LAN adapter		o	o
BRP069A71	WLAN module		o	o
BRP069A78	WLAN Cartridge		o	o
EKUHWG3D	-G3- kit	*(11)	-	-
AFVALVE1	Freeze protection valve		-	-
ESAE04A01*	Daikin Residential Controller		-	-
156021	dirt seperator		o	o
EKECBIVCO2AF	Biv Connector Kit		-	o
EKECDBCO2AF	DB connector Kit		o	o
EKSRPS4AB	Drain back solar control pump station		o	o

Reference	Description	EBS*(11/16)P(30/50)DF
EKMIKPOAF	Mixing kit – PCB only	o
EKMIKPHAF	Mixing kit – PCB with hydraulics	o
EKMIKHMAF	Hydraulics – mixed pump group	o
EKMIKHUAF	Hydraulics – unmixed pump group	o
EKMIKBVAF	Balancing vessel	o
EKMIKDIAF	Distributor for balancing vessel	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 -EKRTR1-
(8) The backup heater capacity depends on a user interface setting.
(9) Multi-zoning wired controls
(11) This kit is mandatory for the UK models.
(12) Only possible in combination with -EKMIKPOAF-
(13) Only possible in combination with -EKMIKBVAF- and -EKMIKPHAF- or -EKMIKHUAF-
(14) Only possible in combination with -HBKIT*-
(15) Only possible in combination with -ETVZ*-
(16) Only 1 Backup heater can be connected on one unit: 3 or 6* or 9 kW (*No 6T1-model applicable). EKECBUCO*AF is needed to connect the backup heater to the main unit
(17) Mandatory for installations without a bivalent heat source (oil or gas)

Remark

Other combinations than mentioned in this combination table are prohibited.

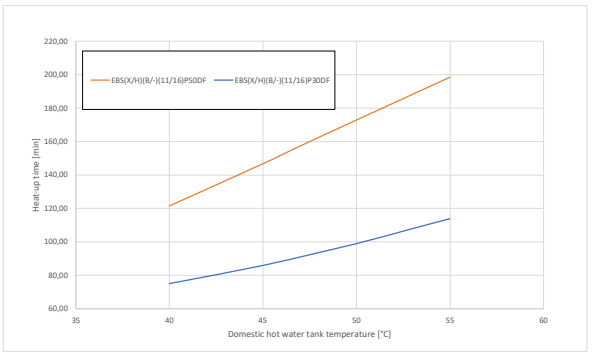
3D136146D

5 Capacity tables

5 - 1 Domestic Hot Water performance

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D

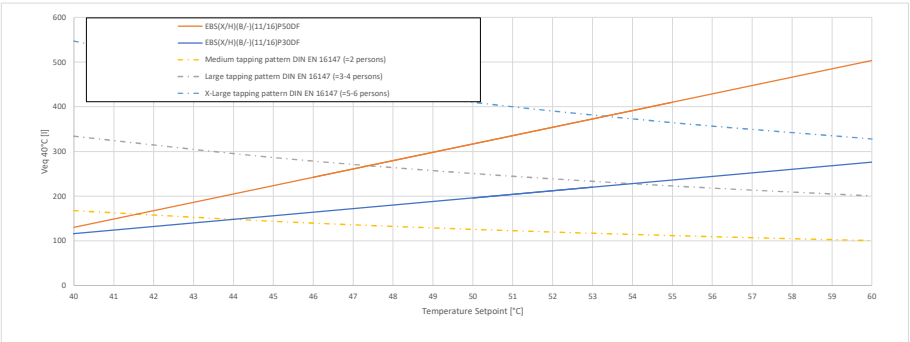
Heat-up times



	Heat-up time domestic hot water tank until 45°C
EBS(X/H)(B/-)(11/16)P30DF	-86- min.
EBS(X/H)(B/-)(11/16)P50DF	-147- min.

Selection guide for the domestic hot water tank volume

Veq 40°C = the amout 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; draw-off volume flow = 10 l/min

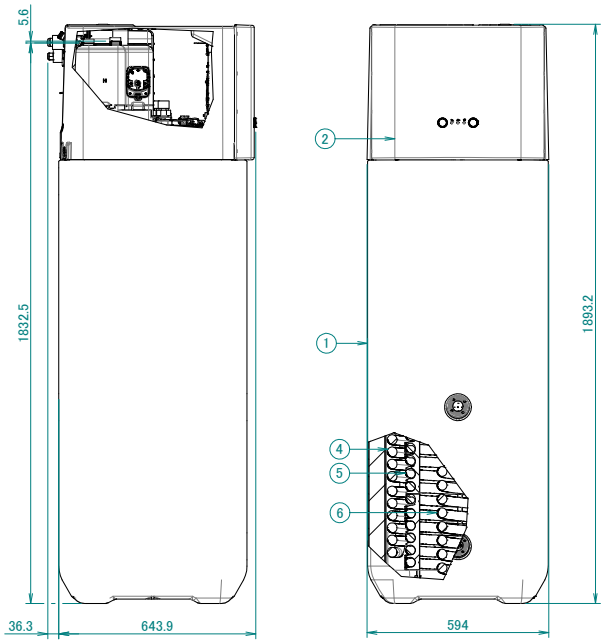


3D136147A

6 Dimensional drawings

6 - 1 Dimensional Drawings

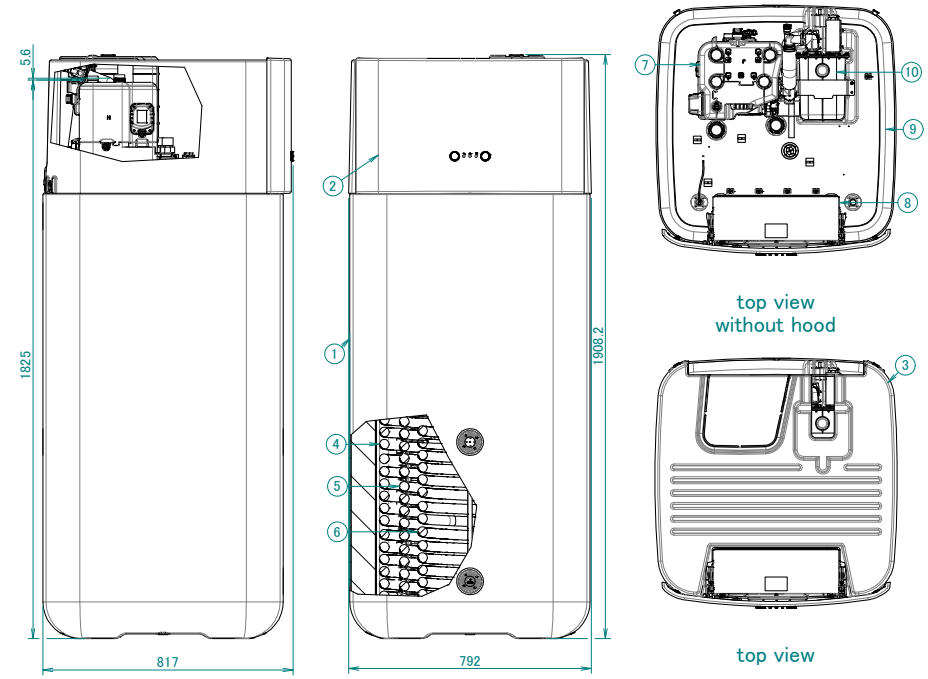
EBSH11-16P30D
EBSHB11-16P30D
EBSX11-16P30D
EBSXB11-16P30D



①	300 l water tank
②	HPSU MMI front 3xx
③	HPSU MMI hood 3xx
④	DHW exchanger
⑤	load exchanger
⑥	BIV exchanger
⑦	hydraulics
⑧	switch box
⑨	3xx tank lid
⑩	plate heat exchanger

3D136141

EBSH11-16P50D
EBSHB11-16P50D
EBSX11-16P50D
EBSXB11-16P50D



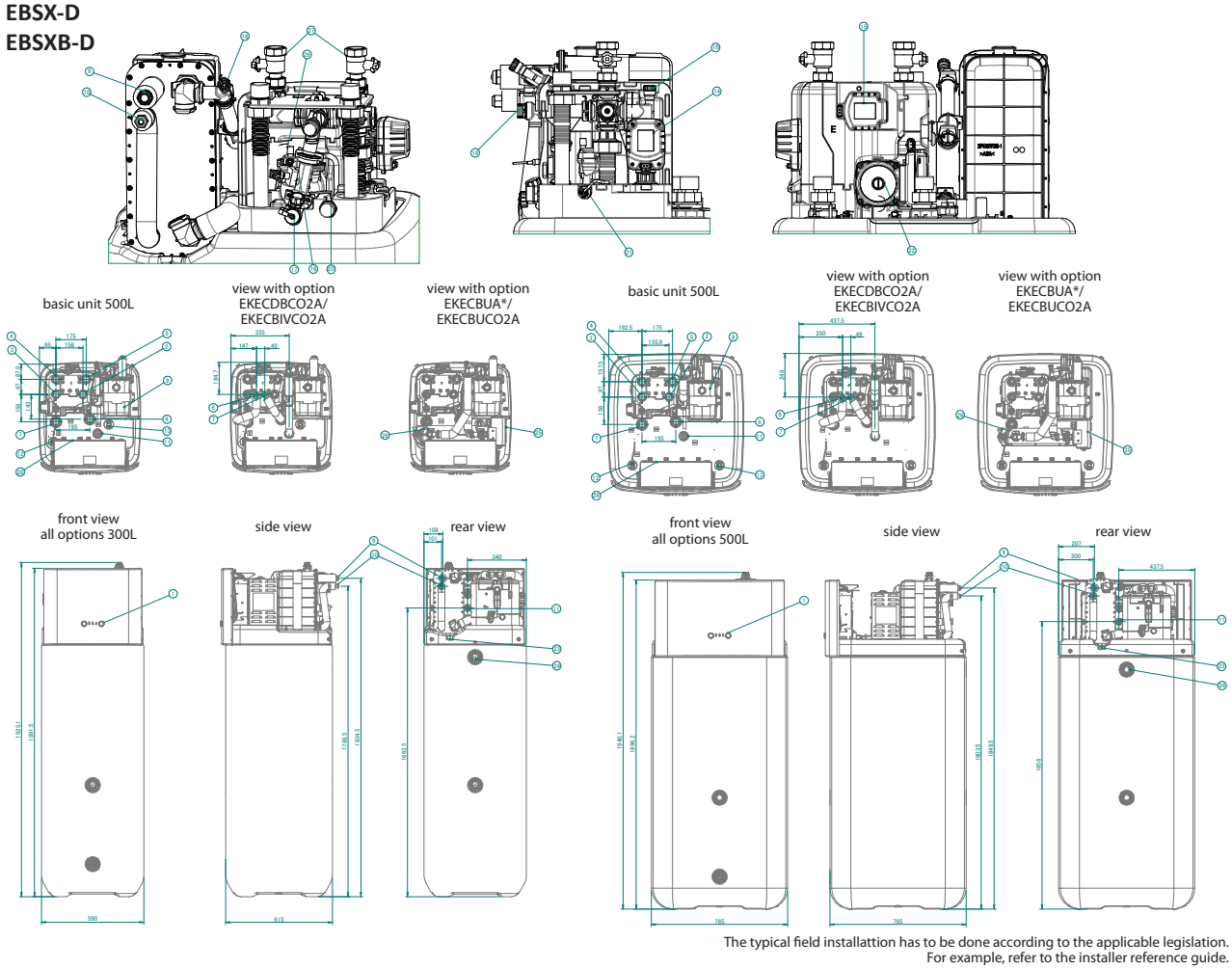
①	500 l water tank
②	HPSU MMI front 5xx
③	HPSU MMI hood 5xx
④	DHW exchanger
⑤	load exchanger
⑥	BIV exchanger
⑦	hydraulics
⑧	switch box
⑨	5xx tank lid
⑩	plate heat exchanger

3D136142

6 Dimensional drawings

6 - 1 Dimensional Drawings

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



The typical field installattion has to be done according to the applicable legislation.
For example, refer to the installer reference guide.

1	User interface
2	Space heating/cooling water in (screw connection, 1")
3	Space heating/cooling water out (screw connection, 1")
4	Domestic hot water: cold water in (screw connection, 1")
5	Domestic hot water: hot water out (screw connection, 1")
6	BIV water: hot water in (screw connection, 1")
7	BIV water: cold water out (screw connection, 1")
8	Plate heat exchanger
9	Refrigerant gas pipe connection (flare connection, 5/8")
10	Refrigerant liquid pipe connection (flare connection, 3/8")
11	Drain-back connection (screw connection, 1")
12	Tank temperature sensor
13	Level indicator
14	Tank valve
15	Bypass valve

16	Flow sensor
17	Fill and drain valve water circuit
18	Manual air purge
19	Safety valve
20	Expansions vessel connection (screw connection, 3/4")
21	Space heating water pessure sensor
22	Pump
23	Drain pan
24	Spillover connection
25	Switch box backup heater
26	Backup heater
27	Shut-off valves
28	Main switch box
29	Automatic air purge

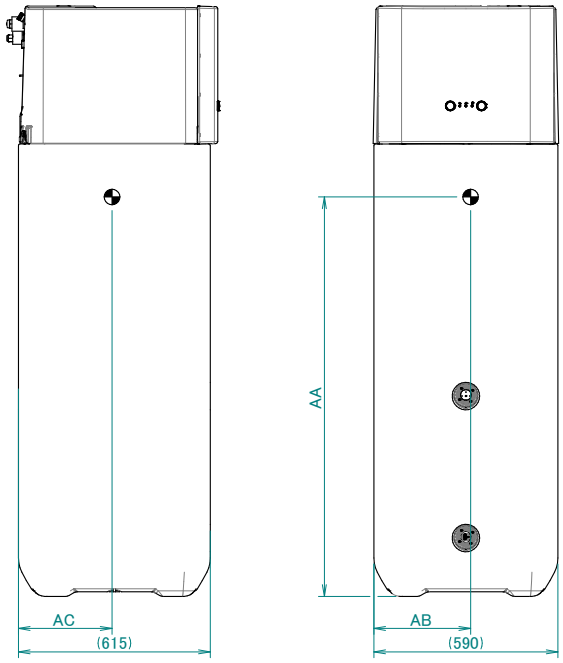
3D138487

7 Centre of gravity

7 - 1 Centre of Gravity

EBSH11-163P0D
EBSHB11-16P30D
EBSX11-16P30D
EBSXB11-16P30D

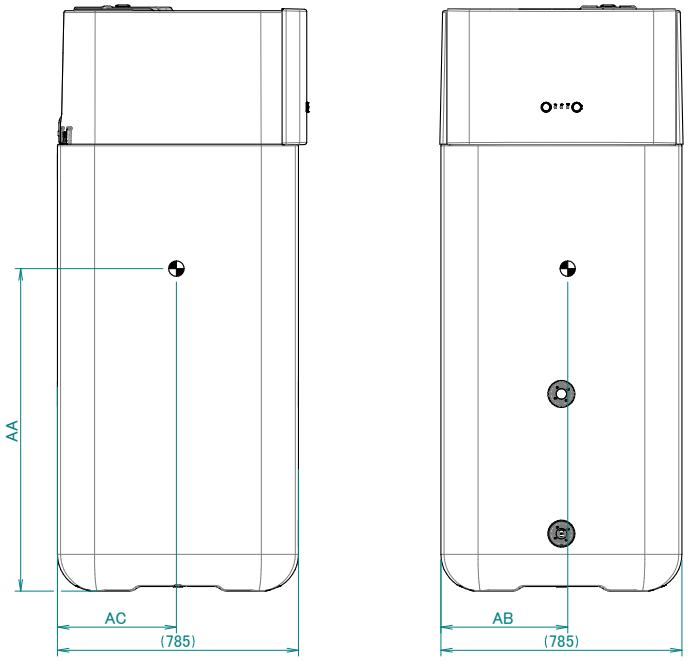
PART	REVISION	AA	AB	AC	JUDGE	CLASSIFY
1		1280	310	300	2	G1



3D136143

EBSH11-16P50D
EBSHB11-16P50D
EBSX11-16P50D
EBSXB11-16P50D

PART	REVISION	AA	AB	AC	JUDGE	CLASSIFY
1		1050	412	387	2	G1

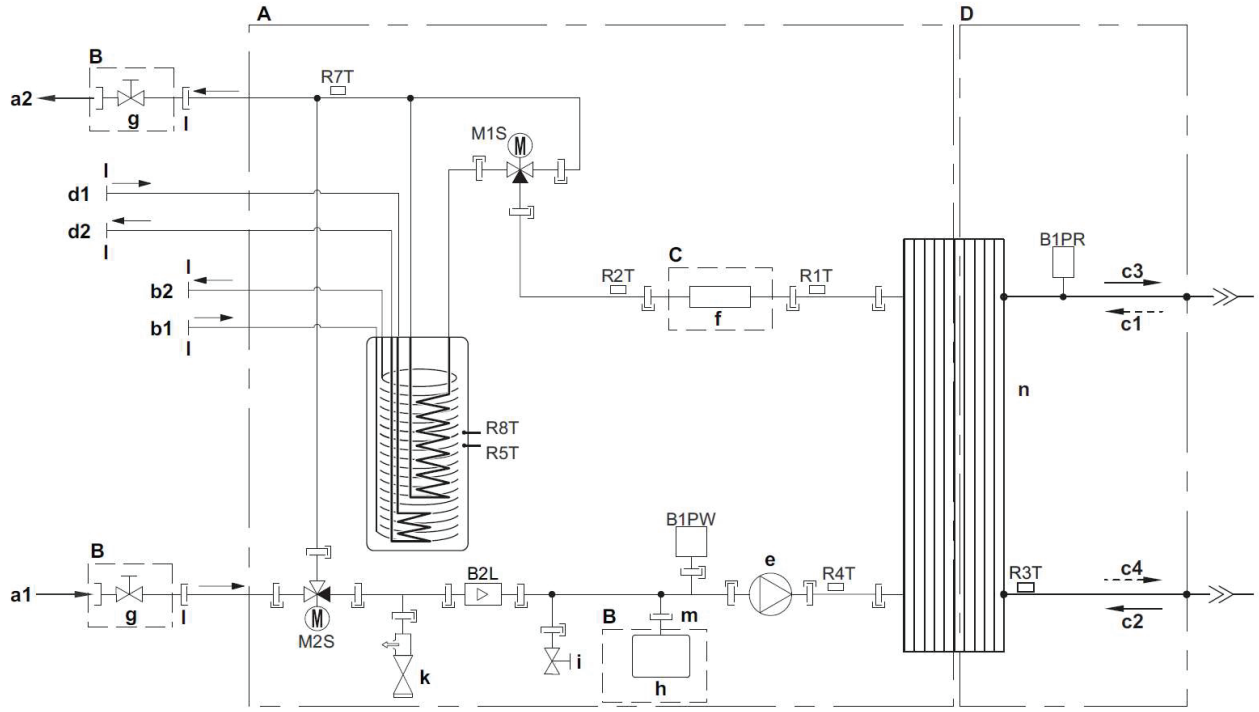


3D136144

8 Piping diagrams

8 - 1 Piping Diagrams

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



A	Indoor unit
B	Field installed
C	Optional
D	Referigerant side
a1	Space heating/cooling water IN
a2	Space heating/cooling water OUT
b1	Domestic hot water: cold water in
b2	Domestic hot water: hot water out
c1	Refrigerant suction connection IN (heating mode; condenser)
c2	Refrigerant liquid connection IN (cooling mode; evaporator)
c3	Refrigerant suction connection OUT (cooling mode; evaporator)
c4	Refrigerant liquid connection OUT (heating mode; condenser)
d1	Water in connection BIV
d2	Water out connection BIV
e	Pump
f	Backup heater
g	Shut-off valve
h	Expansion vessel
i	Drain valve
k	Safety valve
l	Screw connection external 1"
m	Screw connection external 3/4"
n	Plate heat exchanger
B2L	Flow sensor
B1PR	Refrigerant pressure sensor
B1PW	Space heating water pressure sensor
M1S	Mixing 3-way valve
M2S	Bypass 3-way valve
R1T	Outlet water heat exchanger thermistor
R2T	Outlet water backup heater thermistor
R3T	Thermistor (heat exchanger, liquid pipe)
R4T	Inlet water thermistor
R5T, R8T	Tank thermistor
R7T	Water outlet thermistor (main/mixed zone)
	Screw connection
	Flare connection
	Quick coupling
	Brazed connection

3D136151B

9 Wiring diagrams

9 - 1 Notes & Legend

EBSH-D / EBSHB-D / EBSX-D / EBSXB-D

NOTES to go through before starting the unit

X1M : Main terminal
X6M : BUH Power supply terminal
X12M : Field wiring terminal for AC
X15M : Field wiring terminal for DC
—·—·—·— : Earth wiring
– – – – – – : Field supply
(1) : Several wiring possibilities

: Option
: Wiring depending on model
: Not mounted in switch box
: PCB

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

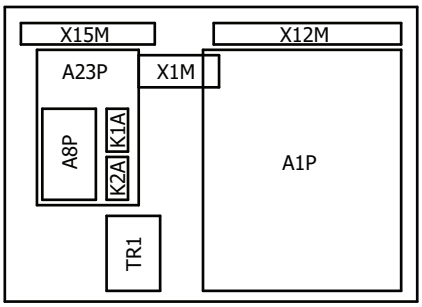
User installed options:
- ☐ Backup heater
- ☐ LAN adapter
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Demand PCB
- ☐ Smartgrid kit
- ☐ WLAN adapter module
- ☐ WLAN cartridge
- ☐ BZ mixing kit

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

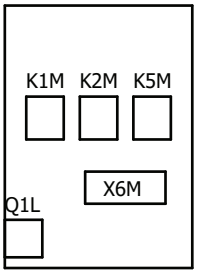
Add LWT:
- ☐ ON/OFF thermostat (wired)
- ☐ ON/OFF thermostat (wireless)
  - ☐ Ext. thermistor
- ☐ Heat pump convector

POSITION IN SWITCH BOX

SWB1



SWB2



LEGEND

Part n°		Description
A1P		main PCB
A2P	*	ON/OFF thermostat (PC=power circuit)
A3P	*	heat pump convector
A8P	*	demand PCB
A9P		status indicator
A11P		MMI PCB
A13P	*	LAN adapter
A14P	*	user interface PCB
A15P	*	receiver PCB (wireless ON/OFF thermostat)
A20P	*	WLAN module
A23P		hydro extension PCB
A30P	*	BZ mixing kit PCB
B2L		flow sensor
B1PW		water pressure sensor
DS1 (A8P)	*	dipswitch
E1H	*	backup heater element (1 kW)
E2H	*	backup heater element (2 kW)
E*P (A9P)		indication LED
F1B	#	overcurrent fuse backup heater
F1T	*	thermal fuse backup heater
F2B	#	overcurrent fuse main
FU1 (A1P)		fuse (T 5A 250 V for PCB)
FU1 (A23P)		fuse (3.15A 250 V for PCB)
K1A, K2A	*	high voltage smartgrid relay
K1M, K2M	*	contactor backup heater
K5M	*	safety contactor BUH
K* (A23P)		relay on PCB
K*R (A*P)		relay on PCB
M1P		main supply pump
M1S		DHW tank mixing 3 way valve
M2P	#	domestic hot water pump
M2S		bypass mixing 3 way valve

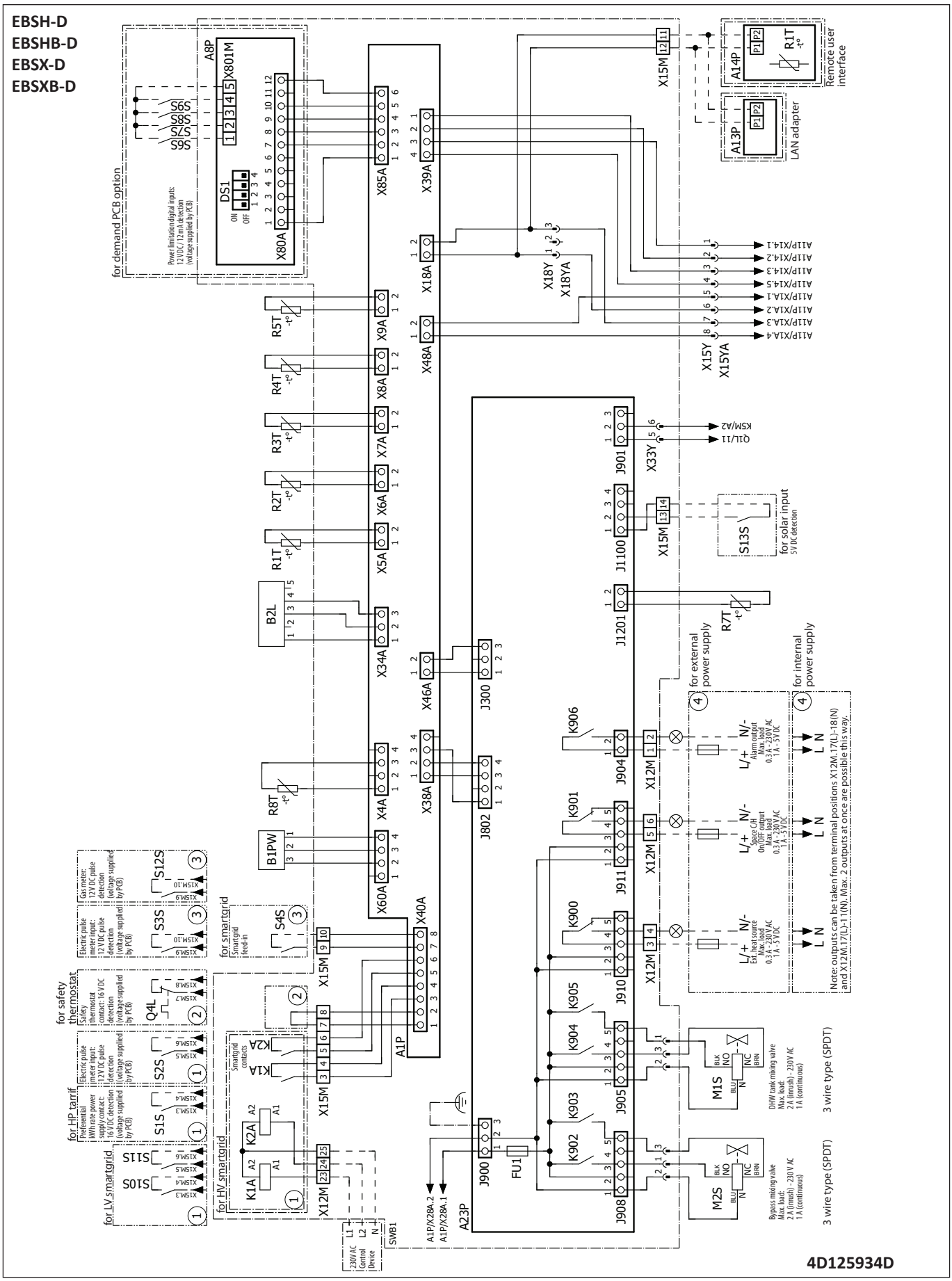
Part n°		Description
M4S	*	shut-off valve
P1M		MMI display
PC (A15P)	*	power circuit
Q1L	*	thermal protector backup heater
Q4L	#	safety thermostat
Q*DI	#	earth leakage circuit breaker
R1H (A2P)	*	humidity sensor
R1T (A1P)		outlet water heat exchanger thermistor
R1T (A2P)	*	ambient sensor ON/OFF thermostat
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, R8T		domestic hot water thermistor
R6T	*	external indoor or outdoor ambient thermistor
R7T		mixed leaving water thermistor
S1S	#	preferential kWh rate PS contact
S2S	#	electrical meter pulse input 1
S3S	#	electrical meter pulse input 2
S4S	#	smart grid feed-in contact
S6S-S9S	*	digital power limitation inputs
S10S-S11S	#	low voltage smartgrid contact
S12S	#	gas meter input
S13S	#	solar input
SW1~2 (A11P)		turn buttons
SW3~5 (A11P)		push button
TR1		power supply transformer
X*, X*A, X*H*, X*Y		connector
X*M		terminal strip

* : optional #: field supply

4D125934D

9 Wiring diagrams

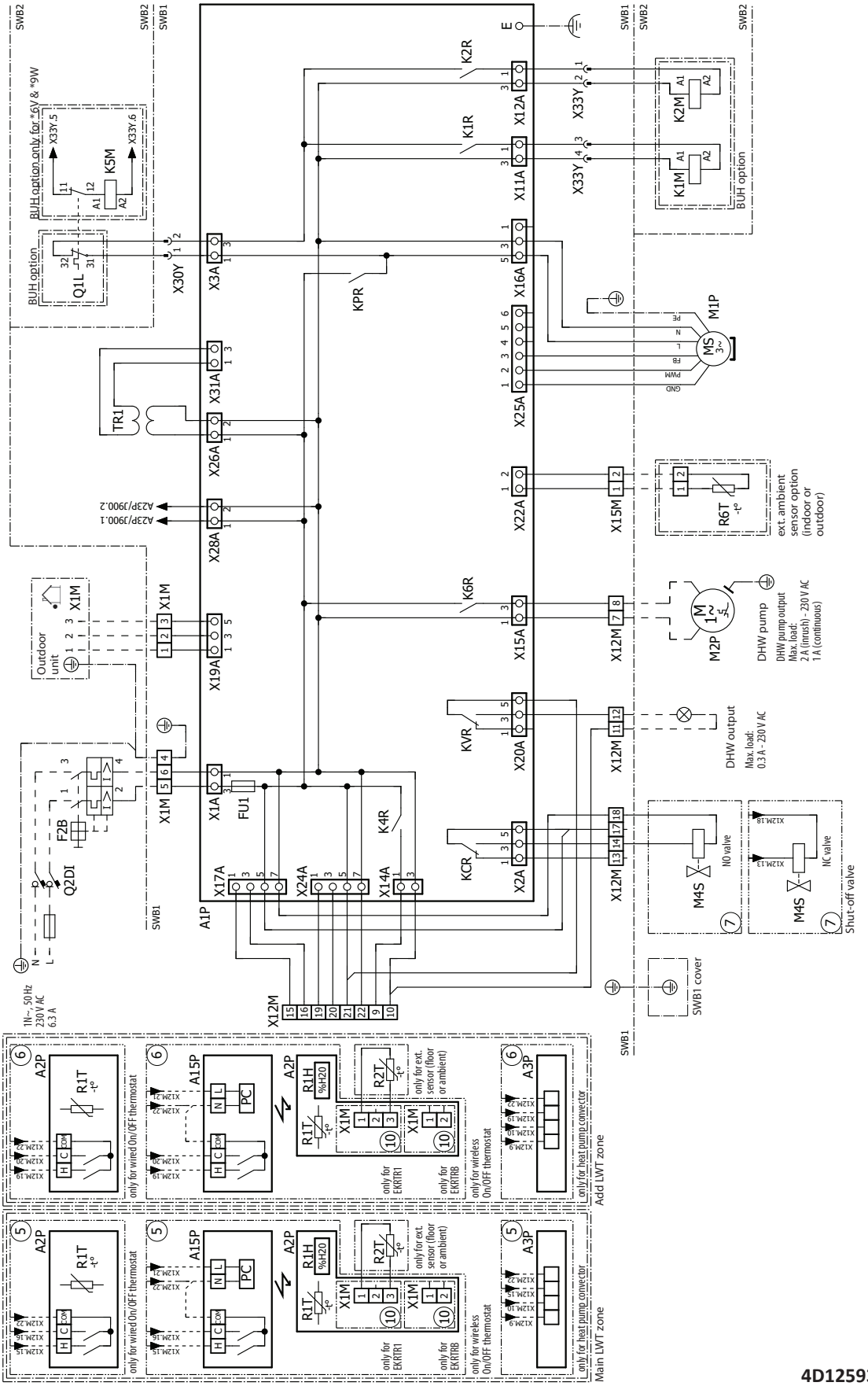
9 - 2 Control Circuit



9 Wiring diagrams

9 - 2 Control Circuit

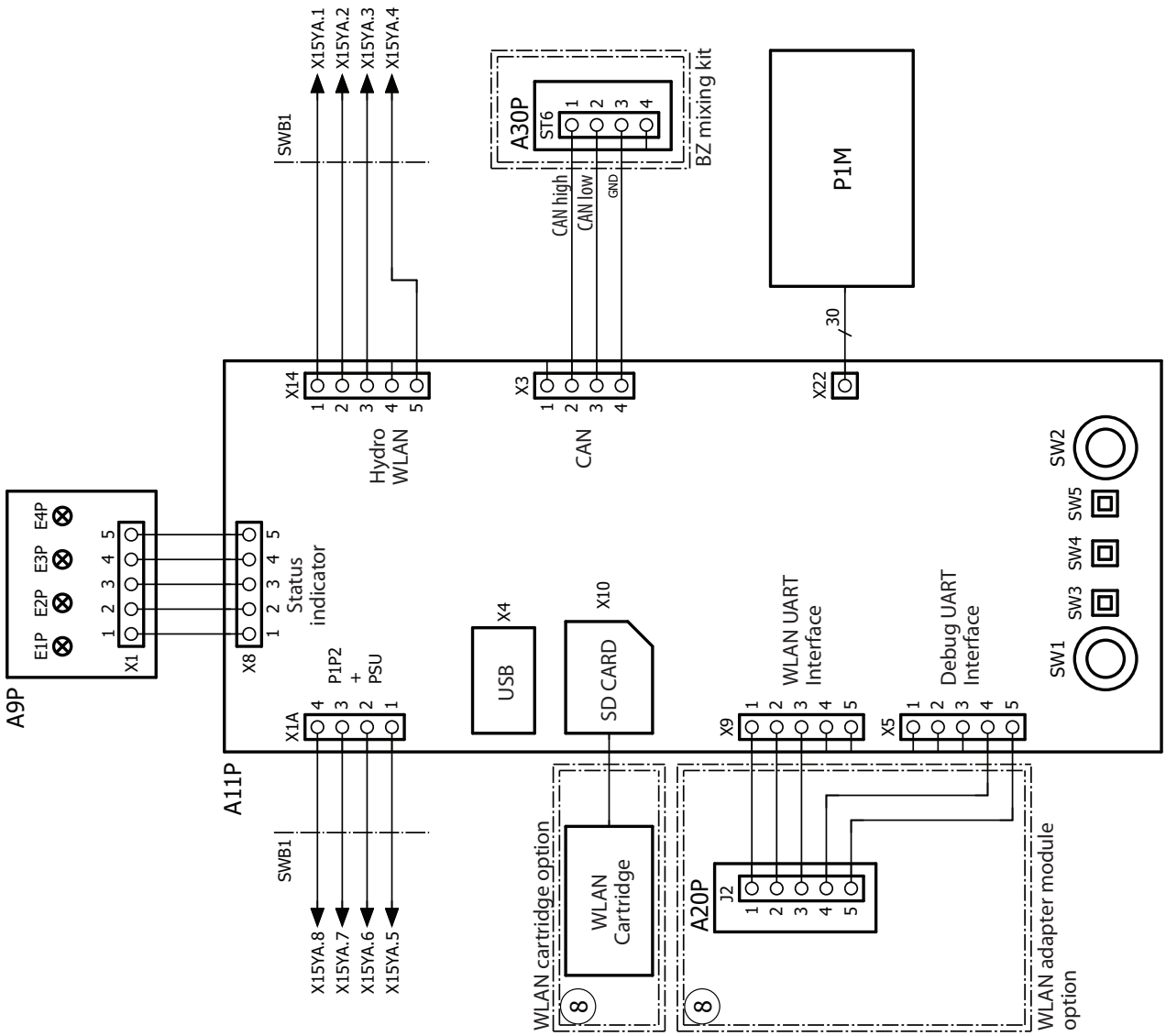
EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



9 Wiring diagrams

9 - 2 Control Circuit

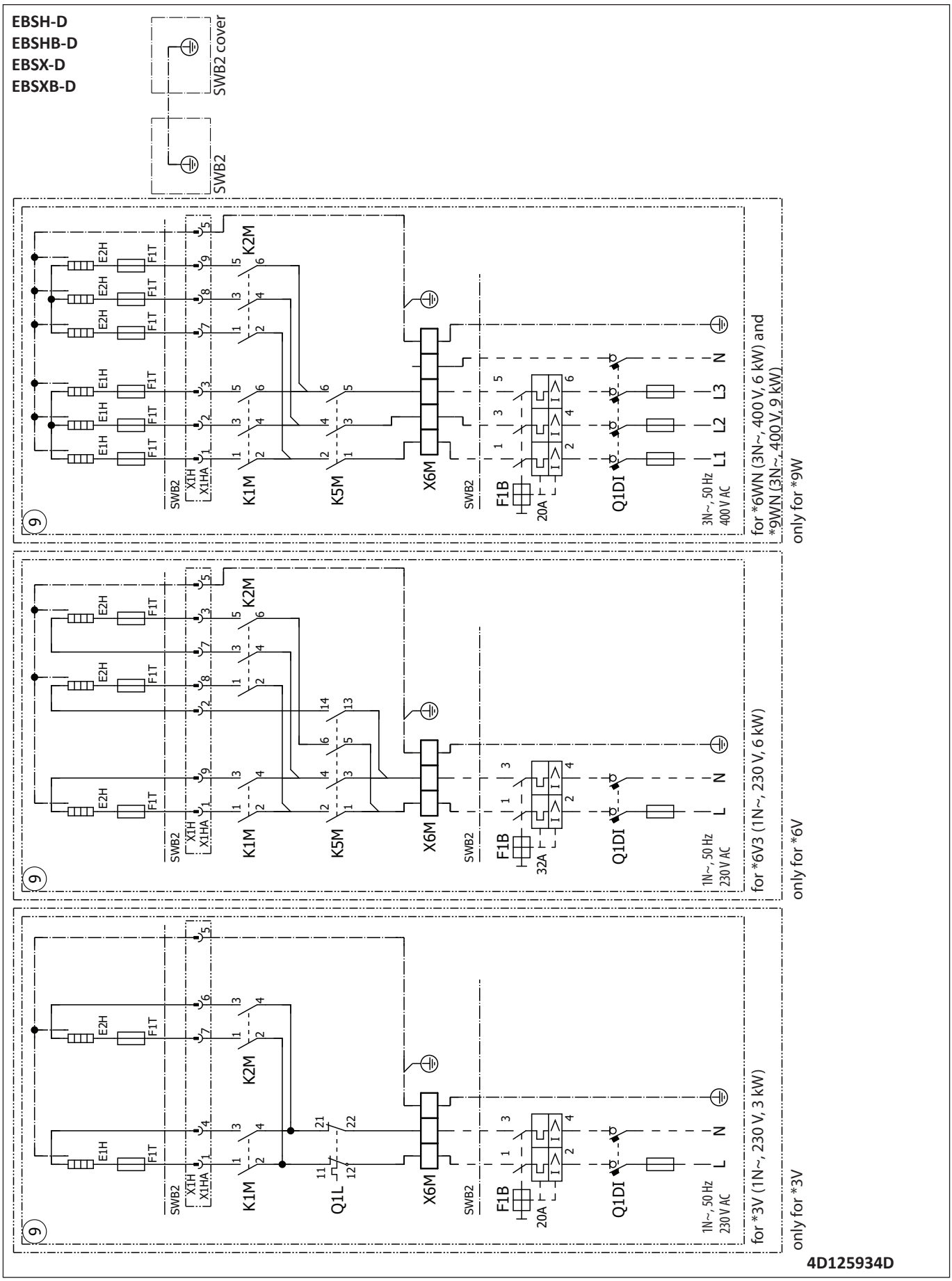
EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



4D125934D

9 Wiring diagrams

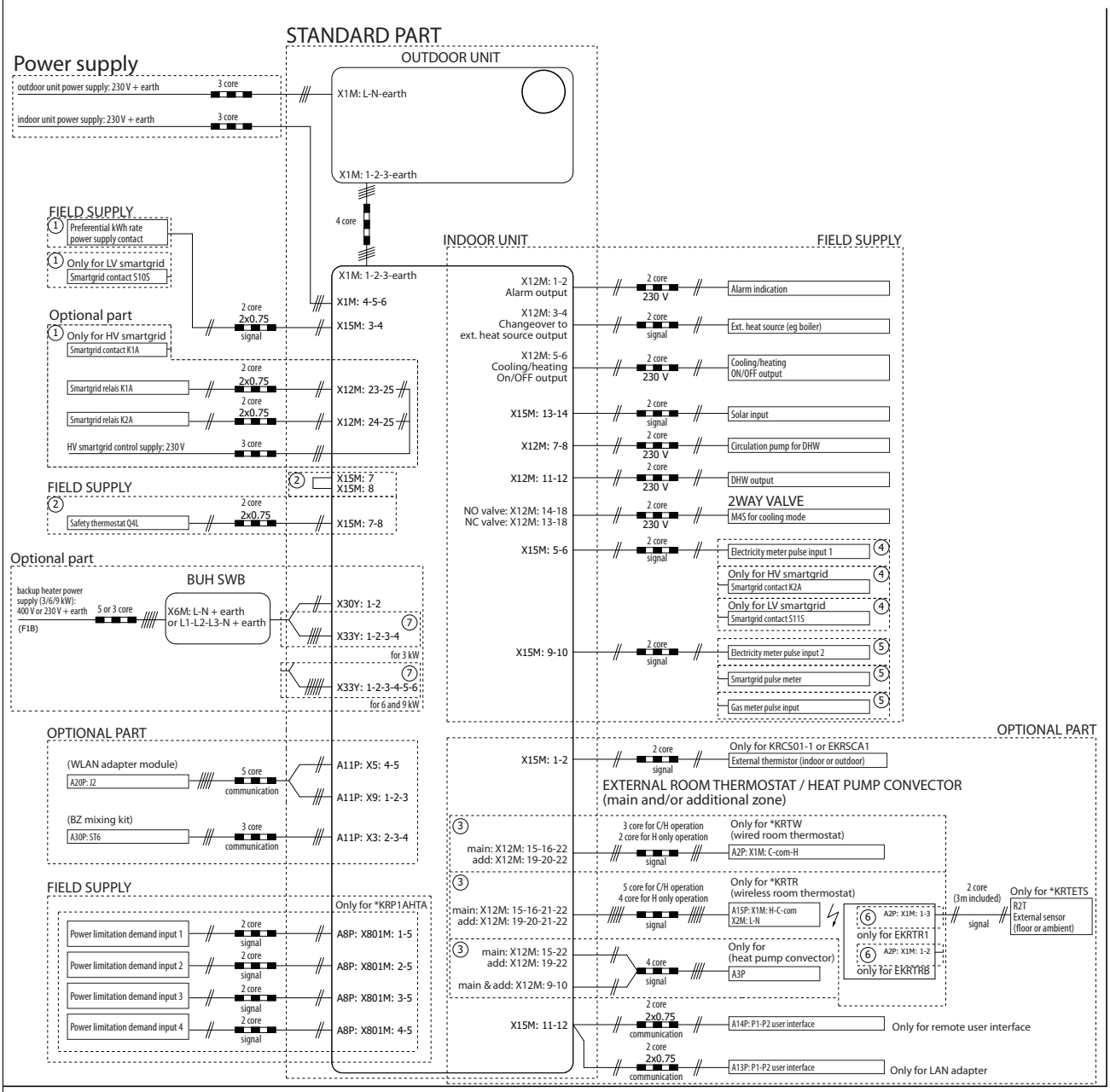
9 - 3 Power Supply, Back-up Heater



10 External connection diagrams

10 - 1 External Connection Diagrams

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



NOTE

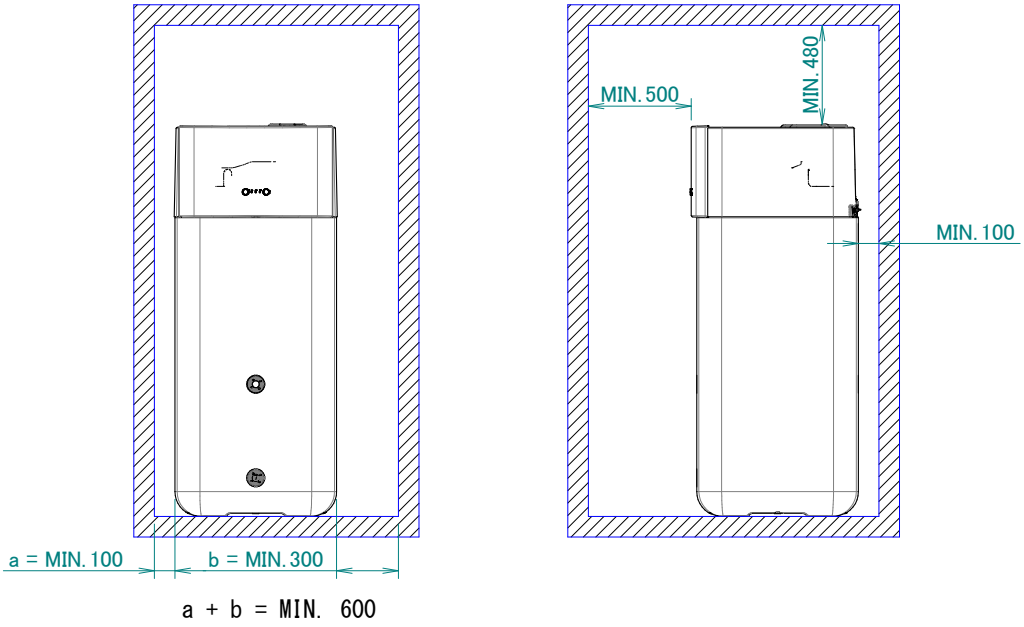
- In case of signal cable: keep minimum distance to power cables > 5 cm

4D135453C

11 Installation

11 - 1 Installation Method

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



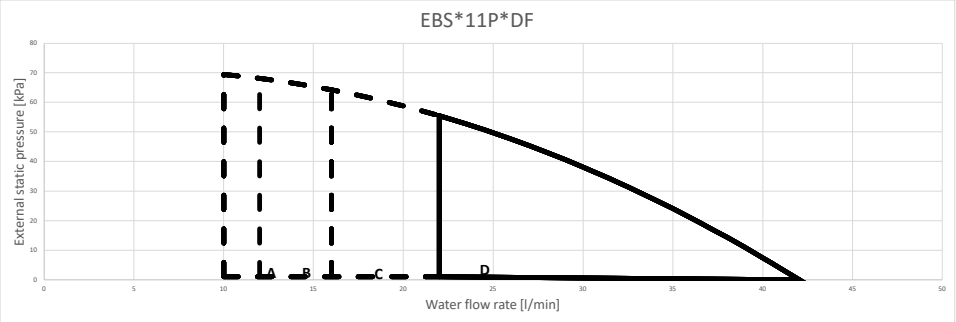
3D136049

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

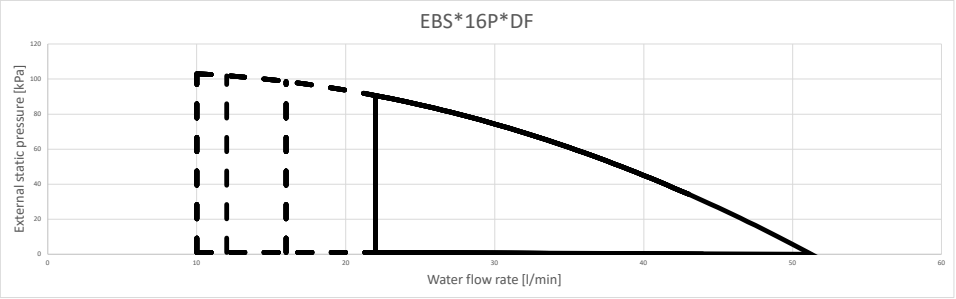
12

EBSH-D
EBSHB-D
EBSX-D
EBSXB-D



A = Minimum water flow rate during normal operation
B = Minimum water flow rate during back up heater operation
C = Minimum water flow rate during Cooling operation
D= Minimum water flow rate during Defrost operation

Notes
1. Selectiong 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 98/83 EC.



A = Minimum water flow rate during normal operation
B = Minimum water flow rate during back up heater operation
C = Minimum water flow rate during Cooling operation
D= Minimum water flow rate during Defrost operation

Notes
1. Selectiong 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 98/83 EC.

3D136149

Daikin Europe N.V. Naamloze Vennootschap · Zandvoordestraat 300 · 8400 Oostende · Belgium · www.daikin.eu · BE 0412 120 336 · RPR Oostende (Responsible Editor)

EEDEN23 01/2023