

Heating Technical Data

Daikin Altherma low temperature split



EEEN15-725

EBBH-CB, EBBX-CB

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EHBH-CB, EHBX-CB

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1 Features

1 - 1 EHBH-CB

- Wall mounted indoor unit
- Energy efficient heating only system based on air to water heat pump technology
- Perfect fit for new built as well as for low energy houses
- Best seasonal efficiencies, providing the highest savings on running costs
- Flexible configuration with respect to heat emitters
- Possible to combine with domestic hot water

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1 Features

1 - 2 EHBX-CB

- Wall mounted indoor unit
- Energy efficient heating and cooling system based on air to water heat pump technology
- Perfect fit for new built as well as for low energy houses
- Best seasonal efficiencies, providing the highest savings on running costs
- Flexible configuration with respect to heat emitters
- Possible to combine with domestic hot water



2 Specifications

2-1 Technical Specifications					EHBH04CB3 V	EHBH08CB9 W	EHBH08CB3 V	EHBH11CB3 V	EHBH11CB9 W	EHBH16CB3 V	EHBH16CB9 W
Power input	Nom.	kW			0.075			0.110		0.170	
Casing	Colour				White						
	Material				Precoated sheet metal						
Dimensions	Unit	Height	mm		890						
		Width	mm		480						
		Depth	mm		344						
	Packed unit	Height	mm		415						
		Width	mm		650						
		Depth	mm		1,016						
Weight	Unit		kg		41	45	43		44		45
	Packed unit		kg		45	48	46		47	46	48
Packing	Material				PP (Straps) / EPS / Carton						
	Weight		kg		3						
Pump	Type				DC motor						
	Nr of speeds				Inverter controlled						
	Power input		W		45		76		140		
Expansion vessel	Volume		l		10						
	Max. water pressure		bar		3						
	Pre pressure		bar		1						
Operation range	Heating	Water side	Min.	°C	15 (1)						
			Max.	°C	55		55 (8)				
	Domestic hot water	Water side	Min.	°C	25						
			Max.	°C	80 (2)						
Water side Heat exchanger	Type				Brazed plate						
	Quantity				1						
	Water volume		l		0.90	1.30		1.00			
	Water flow rate	Min.	l/min		13.0 (3)			16.0 (3)			
		Max.	l/min		13.0	21.5		46.0			
Insulation material				Elastomeric foam							
Refrigerant circuit	Gas side diameter		mm		15.9						
	Liquid side diameter		mm		6.4		9.5				
Sound power level	Nom.		dBA		40 (4)		41 (4)		44 (4)		
Sound pressure level	Nom.		dBA		26 (5)		27 (5)		30 (5)		
Water filter	Diameter perforations		mm		1.0						
	Material				copper - brass - stainless steel						
Water circuit	Piping connections diameter		inch		G 1"1/4 (female)						
	Safety valve		bar		3						
	Manometer				Yes						
	Drain valve / fill valve				Yes						
	Shut off valve				Yes						
	Air purge valve				Yes						
	Total water volume		l		3.0 (6)	4.0 (6)					
Safety devices	Item	01			Thermal cut out						
PED	Category				Art3§3 / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC	Category I / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC		Art3§3 / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC			
	Most critical part	Name			-	Plate heat exchanger		-			
		Ps*V		Bar*I	-	51		-			
2-2 Technical Specifications					EHBX04CB3 V	EHBX08CB9 W	EHBX08CB3 V	EHBX11CB9 W	EHBX11CB3 V	EHBX16CB9 W	EHBX16CB3 V
Power input	Nom.	kW			0.075			0.110		0.170	
Casing	Colour				White						
	Material				Precoated sheet metal						

2 Specifications

2-2 Technical Specifications					EHBX04CB3 V	EHBX08CB9 W	EHBX08CB3 V	EHBX11CB9 W	EHBX11CB3 V	EHBX16CB9 W	EHBX16CB3 V	
Dimensions	Unit	Height		mm	890							
		Width		mm	480							
		Depth		mm	344							
	Packed unit	Height		mm	415							
		Width		mm	650							
		Depth		mm	1,016							
Weight	Unit			kg	42	45	44	45	43	46	44	
	Packed unit			kg	45	48	47	48	47	49	47	
Packing	Material				PP (Straps) / EPS / Carton							
	Weight			kg	3							
Pump	Type				DC motor							
	Nr of speeds				Inverter controlled							
	Power input			W	45			76		140		
Expansion vessel	Volume			l	10							
	Max. water pressure			bar	3							
	Pre pressure			bar	1							
Operation range	Heating	Water side	Min.	°C	15 (1)							
			Max.	°C	55			55 (8)				
	Domestic hot water	Water side	Min.	°C	25							
			Max.	°C	80 (2)							
	Water side Heat exchanger	Type				Brazed plate						
		Quantity				1						
Water volume			l	0.90	1.30		1.00					
Water flow rate		Min.		l/min	13.0 (3)			16.0 (3)				
		Max.		l/min	13.0	21.5		46.0				
Insulation material				Elastomeric foam								
Refrigerant circuit	Gas side diameter			mm	15.9							
	Liquid side diameter			mm	6.4			9.5				
Sound power level	Nom.			dBA	40 (4)			41 (4)		44 (4)		
Sound pressure level	Nom.			dBA	26 (5)			27 (5)		30 (5)		
Water filter	Diameter perforations			mm	1.0							
	Material				copper - brass - stainless steel							
Water circuit	Piping connections diameter			inch	G 1"1/4 (female)							
	Safety valve			bar	3							
	Manometer				Yes							
	Drain valve / fill valve				Yes							
	Shut off valve				Yes							
	Air purge valve				Yes							
	Total water volume			l	3.0 (6)	4.0 (6)						
Safety devices	Item	01			Thermal cut out							
PED	Category				Art3§3 / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC	Category I / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC		Art3§3 / PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC				
	Most critical part	Name			-	Plate heat exchanger		-				
		Ps*V		Bar*l	-	51		-				

2-3 Electrical Specifications				EHBH04CB3 V	EHBH08CB9 W	EHBH08CB3 V	EHBH11CB3 V	EHBH11CB9 W	EHBH16CB3 V	EHBH16CB9 W
Power supply	Name			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.						
	Voltage range	Min.	%	-10						
		Max.	%	10						
IP class	IP			IP X0B						

2 Specifications

2-3 Electrical Specifications					EHBH04CB3 V	EHBH08CB9 W	EHBH08CB3 V	EHBH11CB3 V	EHBH11CB9 W	EHBH16CB3 V	EHBH16CB9 W	
Electric heater	Power supply	Name			3V3	9W	3V3		9W	3V3	9W	
		Phase			1~	Refer to installation manual or drawing 4D097266	1~		Refer to installation manual or drawing 4D097266	1~	Refer to installation manual or drawing 4D097266	
		Frequency	Hz		50							
		Voltage	V		230	-	230		-	230	-	
	Current	Running current	A		13.0	-	13.0		-	13.0	-	
		Minimum Ssc value			-		Equipment complying with EN/IEC 61000-3-12	-		Equipment complying with EN/IEC 61000-3-12	-	
	Current back-up heater + booster heater (EKHW* models)	Runnin g current	*V3	A	26 (13+13)	-	26 (13+13)		-	26 (13+13)	-	
		Minimu m Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current $\geq 16A$ and $\leq 75A$ per phase							
	Voltage range	Min.		%	-10							
		Max.		%	10							
Wiring connections- Communication cable	Quantity				3							
	Remark				2.5 mm²							
Wiring connections- Electric meter	Quantity				2							
	Remark				Minimum 0.75 mm² (5VDC pulse detection)							
Wiring connections- Preferential kWh rate power supply	Quantity				Power: 2							
	Remark				Power 6.3A / Select diameter and type according to national and local regulations							
Wiring connections- Domestic hot water pump	Quantity				2							
	Remark				Minimum 0.75 mm² (2A inrush, 1A continuous)							
Wiring connections- For power supply back-up heater	Quantity				3G	Refer to installation manual or drawing 4D093592	3G		Refer to installation manual or drawing 4D093592	3G	Refer to installation manual or drawing 4D093592	
	Remark				Select diameter and type according to national and local regulations							
Wiring connections- For power supply connection to optional *KHW*	Quantity				3G							
	Remark				13A / Select diameter and type according to national and local regulations							
Wiring connections- For connection to optional *KHW* model + Q2L	Quantity				5G							
	Remark				For more details of the voltage range and current, refer to installation manual / Select diameter and type according to national and local regulations							
Wiring connections- For connection with R5T	Quantity				Wire included in option *KHW*							
	Remark				Wire included in option *KHW*							
Wiring connections- For connection with R6T	Quantity				2							
	Remark				Minimum 0.75 mm²							
Wiring connections- For connection with A3P	Quantity				Depends on thermostat type, cf. installation manual							
	Remark				Voltage: 230V / Max. current: 100mA / Min. 0.75mm² / Select diameter and type according to national and local regulations							
Wiring connections- For connection with M2S	Quantity				2							
	Remark				Voltage: 230V / Max. current: 100mA / Min. 0.75mm² / Select diameter and type according to national and local regulations							
Wiring connections- For connection with M3S	Quantity				3							
	Remark				Voltage: 230V / Max. current: 100mA / Min. 0.75mm² / Select diameter and type according to national and local regulations							
Wiring connections- For connection with bottom plate heater	Quantity				2							
	Remark				Voltage: 230V / Min. 0.75mm² / Select diameter and type according to national and local regulations							

2 Specifications

2-3 Electrical Specifications		EHBH04CB3 V	EHBH08CB9 W	EHBH08CB3 V	EHBH11CB3 V	EHBH11CB9 W	EHBH16CB3 V	EHBH16CB9 W
Wiring connections- For connection with user interface	Quantity	2						
	Remark	0.75 mm ² till 1,25 mm ² (max length 500m)						
Wiring connections- For connection with optional FWXV* (demand input and output)	Quantity	4						
	Remark	100 mA, minimum 0.75 mm ²						

2-4 Electrical Specifications					EHBX04CB3 V	EHBX08CB9 W	EHBX08CB3 V	EHBX11CB9 W	EHBX11CB3 V	EHBX16CB9 W	EHBX16CB3 V	
Power supply	Name				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.							
	Voltage range	Min.			-10							
		Max.			10							
IP class	IP				IP X0B							
Electric heater	Power supply	Name			3V3	9W	3V3	9W	3V3	9W	3V3	
		Phase			1~	Refer to installation manual or drawing 4D097266	1~	Refer to installation manual or drawing 4D097266	1~	Refer to installation manual or drawing 4D097266	1~	
		Frequency	Hz		50							
		Voltage	V		230	-	230	-	230	-	230	
	Current	Running current	A		13.0	-	13.0	-	13.0	-	13.0	
		Minimum Ssc value			-	Equipment complying with EN/IEC 61000-3-12	-	Equipment complying with EN/IEC 61000-3-12	-	Equipment complying with EN/IEC 61000-3-12	-	
	Current back-up heater + booster heater (EKHW* models)	Runnin g current	*V3	A	26 (13+13)	-	26 (13+13)	-	26 (13+13)	-	26 (13+13)	
		Minimu m Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and ≤ 75A per phase							
	Voltage range	Min.		%	-10							
		Max.		%	10							
Wiring connections- Communication cable	Quantity				3							
	Remark				2.5 mm²							
Wiring connections- Electric meter	Quantity				2							
	Remark				Minimum 0.75 mm² (5VDC pulse detection)							
Wiring connections- Preferential kWh rate power supply	Quantity				Power: 2							
	Remark				Power 6.3A / Select diameter and type according to national and local regulations							
Wiring connections- Domestic hot water pump	Quantity				2							
	Remark				Minimum 0.75 mm² (2A inrush, 1A continuous)							
Wiring connections- For power supply back-up heater	Quantity				3G	Refer to installation manual or drawing 4D093592	3G	Refer to installation manual or drawing 4D093592	3G	Refer to installation manual or drawing 4D093592	3G	
	Remark				Select diameter and type according to national and local regulations							
Wiring connections- For power supply connection to optional *KHW*	Quantity				3G							
	Remark				13A / Select diameter and type according to national and local regulations							
Wiring connections- For connection to optional *KHW* model + Q2L	Quantity				5G							
	Remark				For more details of the voltage range and current, refer to installation manual / Select diameter and type according to national and local regulations							
Wiring connections- For connection with R5T	Quantity				Wire included in option *KHW*							
	Remark				Wire included in option *KHW*							

2 Specifications

2-4 Electrical Specifications		EHBX04CB3 V	EHBX08CB9 W	EHBX08CB3 V	EHBX11CB9 W	EHBX11CB3 V	EHBX16CB9 W	EHBX16CB3 V
Wiring connections- For connection with R6T	Quantity	2						
	Remark	Minimum 0.75 mm ²						
Wiring connections- For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual						
	Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ² / Select diameter and type according to national and local regulations						
Wiring connections- For connection with M2S	Quantity	2						
	Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ² / Select diameter and type according to national and local regulations						
Wiring connections- For connection with M3S	Quantity	3						
	Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ² / Select diameter and type according to national and local regulations						
Wiring connections- For connection with bottom plate heater	Quantity	2						
	Remark	Voltage: 230V / Min. 0.75mm ² / Select diameter and type according to national and local regulations						
Wiring connections- For connection with user interface	Quantity	2						
	Remark	0.75 mm ² till 1,25 mm ² (max length 500m)						
Wiring connections- For connection with optional FWXV* (demand input and output)	Quantity	4						
	Remark	100 mA, minimum 0.75 mm ²						

Notes

- (1) 15°C-25°C: BUH only, no heat pump operation = during commissioning
- (2) > 50°C BSH only, no heatpump operation
- (3) Operation area is extended to lower flow rates only in case the unit operates with heat pump only. (Not in startup, no BUH operation, no defrost operation).
- (4) DB/WB 7°C/6°C - LWC 35°C (DT=5°C)
- (5) The sound pressure level is measured in an anechoic room at 1m distance from the unit. It is a relative value, depending on the distance and acoustic environment. The sound pressure level mentioned is maximum possible value inside operation range of unit.
- (6) Including piping + PHE + back-up heater; excluding expansion vessel
- (7) Equipment complying with EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and ≤ 75A per phase
- (8) Refer to operation range for detail for differences between *RHQ* and *RLQ* models

3 Electrical data

3 - 1 Electrical Data

EHB(H/X)-CB

* 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		*RLQ(04/06/08)*				*R*Q(011/014/016)*V3			*R*Q(011/014/016)*W1					
Indoor unit type		*H(B/V)(H/X)(04/08)C*				*H(B/V)(H/X)(11/16)C*			*H(B/V)(H/X)(11/16)C*					
	Backup heater type	3V / 9W	9W	9W	3V / 9W	9W	9W	3V / 9W	9W	9W				
	Backup heater power supply	1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V				
	Backup heater configuration	3 / 6 kW	6 / 9 kW	6 kW	3 / 6 kW	6 / 9 kW	6 kW	3 / 6 kW	6 / 9 kW	6 kW				
Normal kWh rate power supply														
Electrical meter type	1~	1	1	-	-	1	1	-	-	1	-	1	-	-
	3~ balanced	-	1	-	-	-	1	-	-	1	-	1	-	-
	3~ unbalanced	-	-	1	1	-	-	1	1	-	1	-	1	1
Preferential kWh rate power supply														
Electrical meter type	1~	2	1	1	2	1	1	1	1	-	-	-	-	-
	3~ balanced	-	-	-	-	-	-	-	1	1	1	1	1	1
	3~ unbalanced	-	1	1	1	-	1	1	-	-	1	1	1	1

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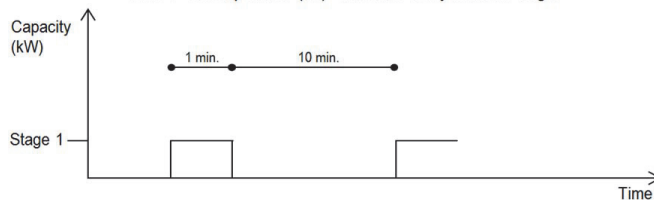
3 Electrical data

3 - 1 Electrical Data

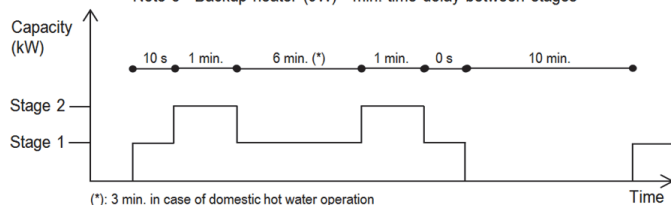
EHB(H/X)-CB

Electrical specifications Backup heater and Booster heater (*KHW* models)									
Backup heater	Type			3V	9W				
	Capacity setting		kW	3	6	3	6	6	9
	Capacity stage			1	2	1	2	2	2
	Capacity stage 1		kW	3	3	3	3	3	3
	Capacity stage 2		kW	-	6	6	6	6	9
	Minimum time delay between stages			Note 4		Note 5			
	Power supply (1)	Phase		1~	3~	1~	1~	3~	3~
		Frequency	Hz	50		50			
	Current	Voltage	V	230	230	230	230	400	400
		Nominal running current	A	13	15,1	13	26	8,7	13
Booster heater (optional) (*KHW* models)	Zmax (backup heater) (2)		Ω	-	-	-	-	-	-
			Complex	-	-	-	-	-	-
	Minimum Ssc value		kVA	-	-	-	(3)	-	-
	Capacity setting		kW	3	3	3	3	3	3
	Capacity stage			1	1	1	1	1	1
	Minimum time delay between stages			Note 6					
	Current	Nominal running current	+ EK*V3 A	26 (13+13)	28,1 (15,1+13)	26 (13+13)	39 (26+13)	21,7 (8,7+13)	26 (13+13)
			+ EK*Z2 A	-	-	-	-	16,2 (8,7+7,5)	20,5 (13+7,5)
		Minimum Ssc value	+ EK*V3 kVA	(3)	(3)	(3)	(3)	(3)	(3)
			+ EK*Z2 kVA	-	-	-	-	(3)	(3)
	Zmax (backup heater)		Ω	-	-	-	-	-	-
	Booster heater (*KHW* models) (2)		Complex	-	-	-	-	-	-
Notes	(1)	The above-mentioned power supply of the hydrobox is for the backup heater only. The switch box and the pump of the hydrobox are supplied with the outdoor unit. 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							

Note 4 - Backup heater (3V) - min. time delay between stages

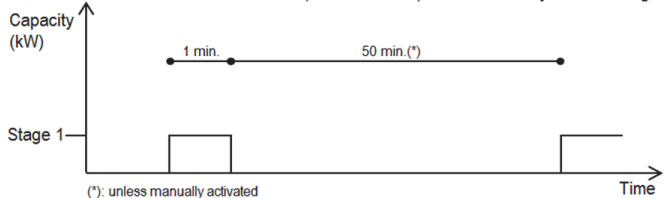


Note 5 - Backup heater (9W) - min. time delay between stages



(*): 3 min. in case of domestic hot water operation

Note 6 - Booster heater (*KHW* models) - min. time delay between stages



(*): unless manually activated

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4 Combination table

4 - 1 Combination Table

EHB(H/X)-CB

Kit availability					
Reference	Description	#			
		3V3	3V3	9WN	9WN
	Heating only model "HBB"				
	Reversible model "HBB"				
*KRSCL1	Remote sensor for outdoor	(15)	o	o	o
*KRUCBL1-7	Remote sensor for indoor	(15)	o	o	o
*KRUCBS	User interface language group 1-7	(17)	o	o	o
	Simplified user interface	(17)	o	o	o
*KHWS150*3V3	Domestic hot water tank 150 l 1~230 V		o	o	o (*)
*KHWS200*3V3	Domestic hot water tank 200 l 1~230 V		o	o	o (*)
*KHWS300*3V3	Domestic hot water tank 300 l 1~230 V		o	o	o (*)
*KHWS200*322	Domestic hot water tank 200 l 2~400 V	(7)	o	o	o
*KHWS300*322	Domestic hot water tank 300 l 2~400 V	(7)	o	o	o
*KHWSU150*3V3	Domestic hot water tank 150 l 1~230 V	(only for UK)	o	o	o (*)
*KHWSU200*3V3	Domestic hot water tank 200 l 1~230 V	(only for UK)	o	o	o (*)
*KHWSU300*3V3	Domestic hot water tank 300 l 1~230 V	(only for UK)	o	o	o (*)
*KHWE150*3V3	Enamel domestic hot water tank 150 l 1~230 V		o	o	o (*)
*KHWE200*3V3	Enamel domestic hot water tank 200 l 1~230 V		o	o	o (*)
*KHWE300*3V3	Enamel domestic hot water tank 300 l 1~230 V		o	o	o (*)
*KHWE200*322	Enamel domestic hot water tank 200 l 2~400 V	(7)	o	o	o
*KHWE300*322	Enamel domestic hot water tank 300 l 2~400 V	(7)	o	o	o
*KHBDFCA2	Option kit for condensate-free cooling operation	-	-	-	-
*KRP1HBAA	Digital I/O PCB	(2)	o	o	o
*KRPLAHTA	Demand PCB	(6)	o	o	o
*KRTWA	Wireless room thermostat		o	o	o
*KRTR1	Wireless room thermostat	(receiver included)	o	o	o
*KRTETS	External temperature sensor option kit	(4)	o	o	o
FWXV15AVEB	Heat pump convector		o	o (5)	o
FWXV20AVEB	Heat pump convector		o	o (5)	o
KXVXHP	Heat pump convector valve kit	(5)	o	o (5)	o
*KPCFAB2	PC cable kit	(16)	o	o	o

Outdoor combination table for *HBB(H/X)04/08/11/16CB#									
		*RLQ 004CA*V3*	*RLQ 006CA*V3*	*RLQ 008CA*V3*	*RHQ 0118*(V3/W1)	*RHQ 0148*(V3/W1)	*RHQ 0168*(V3/W1)	*RLQ 011C*(V3/W1)	*RLQ 014C*(V3/W1)
HBB04CB	Heating only	o	---	---	---	---	---	---	---
HBB04CB	Reversible	o	---	---	---	---	---	---	---
HBB08CB	Heating only	---	o	o	---	---	---	---	---
HBB08CB	Reversible	---	o	o	---	---	---	---	---
HBB11CB	Heating only	---	---	o	o	---	o	---	---
HBB11CB	Reversible	---	---	o	o	---	o	---	---
HBB16CB	Heating only	---	---	---	o	o	o	o	o
HBB16CB	Reversible	---	---	---	o	o	o	o	o

Kit availability for outdoor units									
		*RLQ 004CA*V3*	*RLQ 006CA*V3*	*RLQ 008CA*V3*	*RHQ 0118*(V3/W1)	*RHQ 0148*(V3/W1)	*RHQ 0168*(V3/W1)	*RLQ 011C*(V3/W1)	*RLQ 014C*(V3/W1)
EKDP008CA	Drain pan kit	o	o	o	---	---	---	---	---
EKDP008CA	Drain pan kit	o	o	o	---	---	---	---	---
EKFT008CA	Drain pan kit	o	o	o	---	---	---	---	---
*KXK04	Drain plug kit	(3)	---	---	o	o	o	---	---
*KBPHTH16A	Bottom plate heater	(13)(14)	---	---	o	o	o	---	---
*KOT16SNC	Snow cover	---	---	---	---	---	---	o	o
KRPSBM51	Demand PCB	---	---	---	---	---	---	o	o

Notes

(*) If the neutral line is available

(1) Heater tape that can be fixed on the bottom plate to prevent excessive ice formation.

(2) PCB that provides additional output connections:

- (a) Control external heat source (bivalent operation).
- (b) Output remote ON/OFF signal space heating/cooling OR bottom plate heater "KBPHTH16" control.
- (c) Remote alarm output
- (d) Solar pump connection

In "KSOLHWAV1, option kit "KRP1HB is already included.

(3) It is not allowed to combine a bottom plate heater with a drain plug/stop kit.

(4) "KRTETS can only be used in combination with "KRTR1

(5) The valve kit is mandatory if a heat pump convector is installed on a reversible model (not mandatory for heating only models).

(6) PCB to receive up to 4 digital inputs for power limitation, only for "HBB(H/X)04/08/11/16CB#.

(7) The combination possibilities depend on the power supply type.

(8) The bottom plate heater is factory mounted and controlled by the outdoor unit.

(9) Unified model, the actual backup heater capacity depends on the actual internal upwiring.

(10) Solar panel connection kit for additional water heating, to be mounted on the domestic hot water tank.

(11) Both kits are required if installed on the A version of the tank.

(12) Only required when installing KSOLHWAV1 on a UK B series tank ((*KHWSU(150/200/300)B3V3)).

(13) "KHUWB = "KHUWA - 2-way valve and 2-way valve accessories

KUHW2WB = 2-way valve and 2-way valve accessories

(14) Requires digital I/O PCB "KRP1HBAA

(15) Only 1 sensor connectable: indoor or outdoor

(16) Data cable for connection with PC.

(17) The simplified user interface ("KRUCBS) can only be used in combination with a main user interface ("KRUCBL1-7).

Remark

Other combinations than mentioned in this combination table are prohibited.

Kit availability for *KHWS*									
Reference	Description	#							
		150A	200/300A	150(A/B)	200/300(A/B)	150A	200/300A	150B	200/300B
	*KHWE1TW3(V3/Z2)								
	*KHWSB3(V3/Z2)								
	*KHWSU3V3								
*KHUWA	Option kit for the UK "KHWSU150*300*3V3	-	-	-	-	o	o	o	o
*KHUWB	Option kit for the UK "KHWSU150*300*3V3	(13)	-	-	-	o (11)	o (11)	o	o
*KHUW2WB	Option kit for the UK "KHWSU150*300*3V3	(13)	-	-	-	o (11)	o (11)	o (12)	o (12)
*KSOLHWAV1	Solar kit	(10)	o	o	o	o	o	o	o
*KWSBW150	Wall bracket for "KHWSU150*3V3	-	-	o	-	o	-	o	-

Kit availability for "KSOLHWAV1

EKSR3PA	Solar station controller
EKSRD51A	Solar pump station

Factory-mounted optional equipment for "HBB(H/X)04/08/11/16CB#

Description		#			
		HBB(H/X)04CB		*HBB(H/X)08/11/16CB*	
		3V	-	3V	-
		-	3V	-	3V (B)
Heating only model "HBB"		o	o	o	o
Reversible model "HBB"		-	-	-	-
Backup heater 3kW 1N~230 V		o	o	o	o
Backup heater 6kW 1N~230 V		-	-	-	o
Backup heater 6kW 3N~400 V		-	-	-	o
Backup heater 6kW 3~230 V		-	-	-	o
Backup heater 9kW 3N~400 V		-	-	-	o

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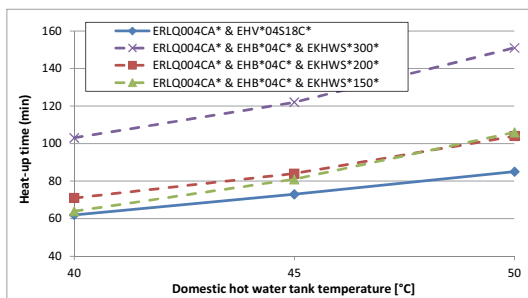
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5 Capacity tables

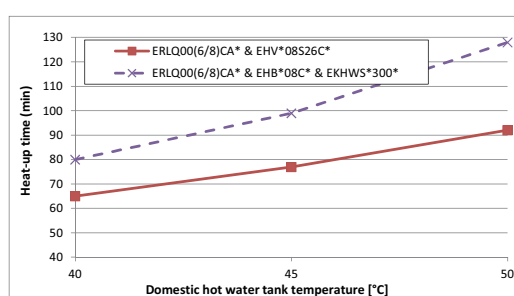
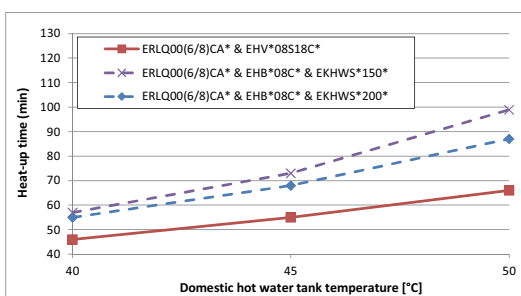
5 - 1 Domestic Hot Water performance

EHB(H/X)-CB

Heat-up times GBS (1)



Heat-up time domestic hot water tank until 45°C		
	ERLQ004CA*	ERLQ00(6/8)CA*
EHV*04S18C*	73	N/A
EHV*08S18C*	N/A	55
EHV*08S26C*	N/A	77
	ERLQ004CA* & EHB*04C*	ERLQ00(6/8)CA* & EHB*08C*
EKHWS*150*	81	73
EKHWS*200*	84	68
EKHWS*300*	122	99



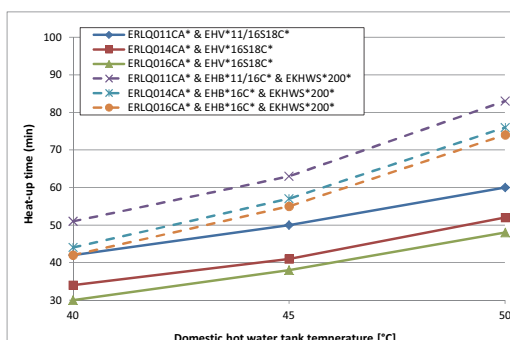
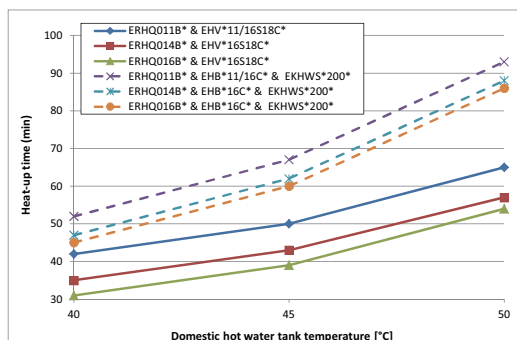
Notes

1. 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.

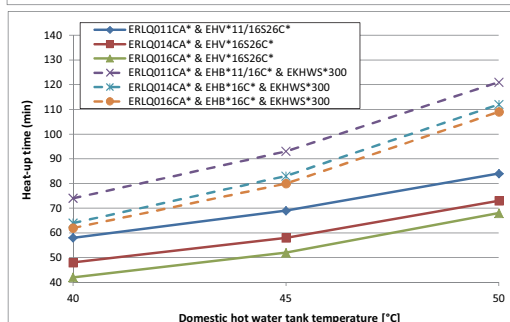
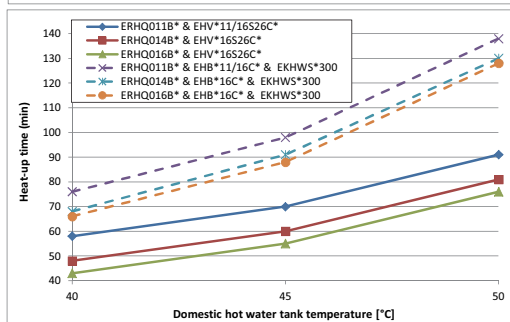
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EHB(H/X)-CB

Heat-up times GQI (1)



Heat-up time domestic hot water tank until 45°C		
	ERLQ016CA*	
EHV*16S18C*	38	
EHV*16S26C*	52	
	ERLQ016CA* & EHB*16C*	
EKHWS*150*	69	
EKHWS*200*	55	
EKHWS*300*	80	



Notes

1. 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.

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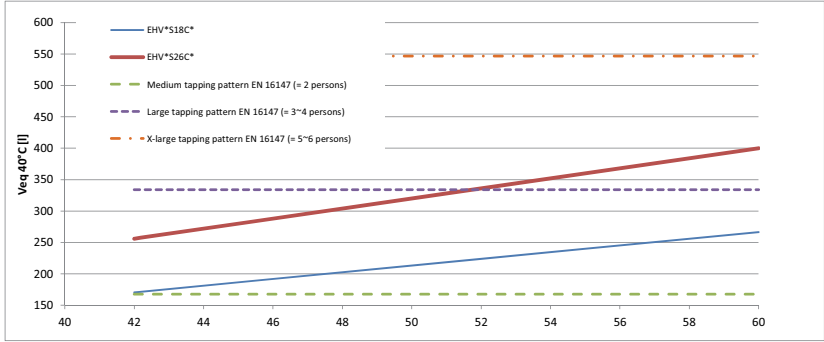
5 Capacity tables

5 - 1 Domestic Hot Water performance

EHB(H/X)-CB

Selection guide for the domestic hot water tank volume
(1)

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.

Heat loss of domestic hot water tank
(2)

Domestic hot water tank		Heat loss [kWh/24h]	
EHV*	180 l	1.38	
	260 l	1.91	

Domestic hot water tank		Heat loss [kWh/24h]	
EKHWS*	150l	1.55	
	200l	1.77	
	300l	2.19	

Notes
(1) According to EN16147.
(2) According to EN12897.

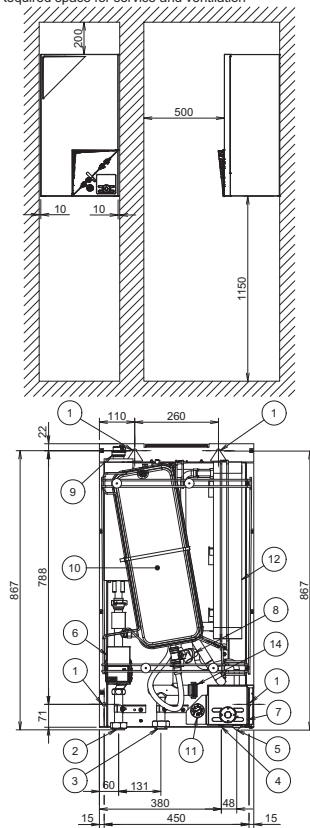
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6 Dimensional drawings

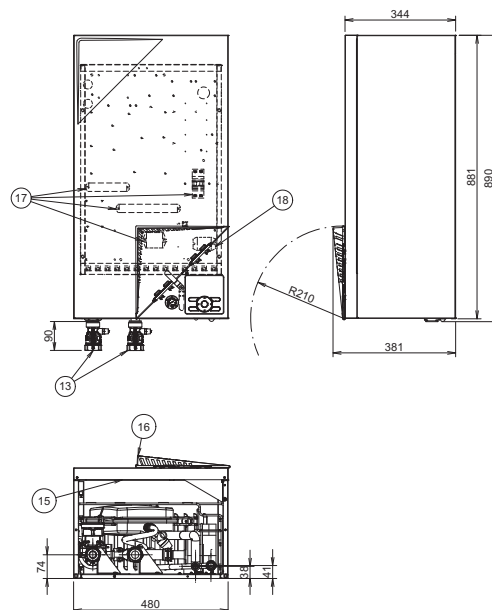
6 - 1 Dimensional Drawings

EHB(H/X)04-08CB

Required space for service and ventilation



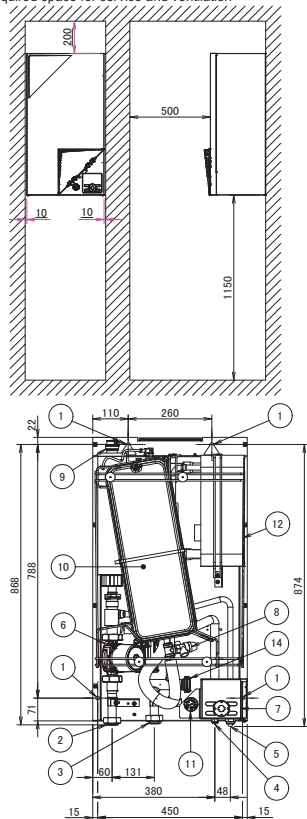
- 1 Holes (Ø12) for wall fixation
- 2 Water out connection (1-1/4" F BSP)
- 3 Water in connection (1-1/4" F BSP)
- 4 Refrigerant liquid connection Ø6.35
- 5 Refrigerant suction connection Ø15.9
- 6 Pump
- 7 User interface
- 8 Safety valve
- 9 Air purge
- 10 Expansion vessel
- 11 Pressure gauge
- 12 Heat exchanger (refrigerant / water)
- 13 Shut-off valve with drain / fill valve (1-1/4" F BSP) (included accessory)
- 14 Water filter
- 15 Wire entrance of the power supply / communication wire
- 16 Service door
- 17 Switch box terminals
- 18 Switch box terminals for the domestic hot water tank (option)



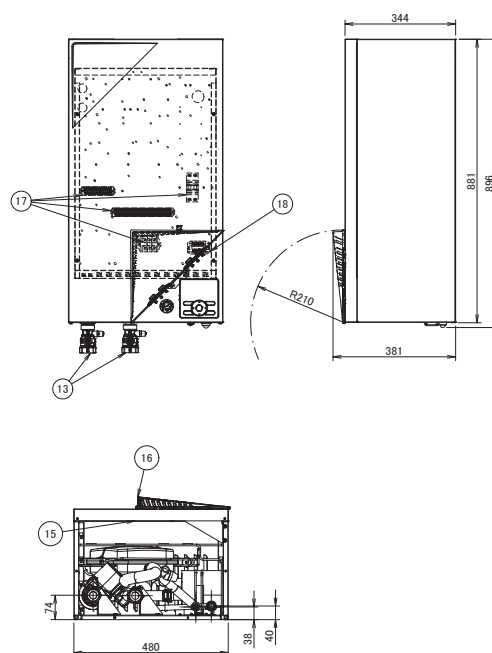
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EHB(H/X)11-16CB

Required space for service and ventilation



- 1 Holes (Ø12) for wall fixation
- 2 Water out connection (1-1/4" F BSP)
- 3 Water in connection (1-1/4" F BSP)
- 4 Refrigerant liquid connection Ø9.52
- 5 Refrigerant suction connection Ø15.9
- 6 Pump
- 7 User interface
- 8 Safety valve
- 9 Air purge
- 10 Expansion vessel
- 11 Pressure gauge
- 12 Heat exchanger (refrigerant / water)
- 13 Shut-off valve with drain / fill valve (1-1/4" F BSP) (included accessory)
- 14 Water filter
- 15 Wire entrance of the power supply / communication wire
- 16 Service door
- 17 Switch box terminals
- 18 Switch box terminals for the domestic hot water tank (option)



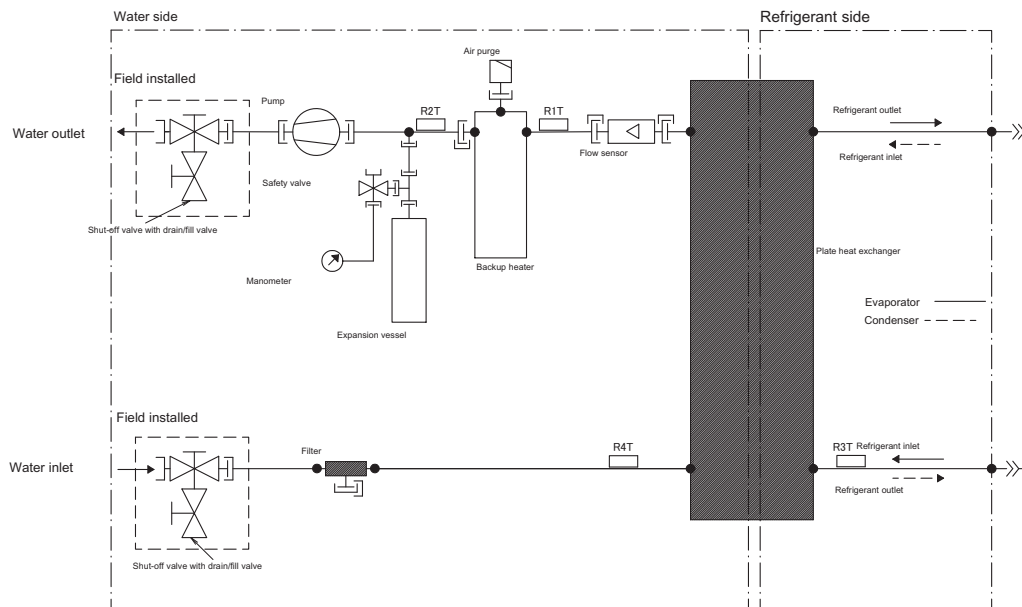
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7 Piping diagrams

7 - 1 Piping Diagrams

EHB(H/X)-CB

	Flare connection		Check valve		Brazed connection		Quick coupling
	Screw connection		Flange connection		Pinched pipe		Spinned pipe



Thermistor	Description
R4T	Inlet water thermistor
R3T	Refrigerant liquid side thermistor
R2T	Outlet water backup heater thermistor
R1T	Outlet water heat exchanger thermistor

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8 Wiring diagrams

8 - 1 Wiring Diagrams - Three Phase

EHB(H/X)-CB

NOTES TO GO THROUGH BEFORE STARTING THE UNIT

X1M : Main terminal
 X2M : Field wiring terminal for AC
 X5M : Field wiring terminal for DC
 X6M, X7M : Backup heater terminal
 X4M : Booster heater terminal

— 15 — : Earth wiring
 — 15 — : Wire number 15
 - - - - - : Field supply
 → **/12.2 : Connection ** continues on page 12 column 2
 ① : Several wiring possibilities



: Option



: Wiring depending on model



: Not mounted in switchbox



: PCB

Backup heater configuration (Only for*9W):

- ☐ 3V3 (1N~, 230 V, 3 kW)
- ☐ 6V3 (1N~, 230 V, 6 kW)
- ☐ 6WN (3N~, 400 V, 6 kW)
- ☐ 9WN (3N~, 400 V, 9 kW)
- ☐ 6T1 (3~, 230 V, 6 kW)

User installed options:

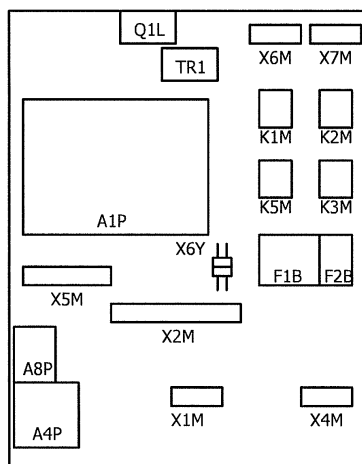
- ☐ Bottom plate heater
- ☐ Domestic hot water tank
- ☐ Domestic hot water tank with solar connection
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Digital I/O PCB
- ☐ Demand PCB
- ☐ Solar pump and control station
- Main LWT:
 - ☐ ON/OFF thermostat (Wired)
 - ☐ ON/OFF thermostat (Wireless)
 - ☐ Ext. Thermistor
 - ☐ Heat pump convactor
- Add LWT:
 - ☐ ON/OFF thermostat (Wired)
 - ☐ ON/OFF thermostat (Wireless)
 - ☐ Ext. Thermistor
 - ☐ Heat pump convactor

LEGEND

* : Optional
 (*) : Standard for *HV*, Optional for *HB*
 # : Field supply

A1P : Main PCB
 A2P : User interface PCB
 A3P * : Solar pumpstation PCB
 A3P * : ON/OFF thermostat (PC=Power circuit)
 A3P * : Heat pump convactor
 A4P * : Digital I/O PCB
 A4P * : Receiver PCB
 (wireless ON/OFF thermostat)
 A8P * : Demand PCB
 B1L : Flow sensor
 BSK * : Solar pump station relay
 DS1 (A8P) * : Dipswitch
 E1H : Backup heater element (1 kW)
 E2H : Backup heater element (2 kW)
 E3H : Backup heater element (3 kW)
 E4H * : Booster heater (3 kW)
 F1B : Overcurrent fuse backup heater
 F2B * : Overcurrent fuse booster heater
 F1T : Thermal fuse backup heater
 F1U,F2U * : Fuse 5A 250V for digital I/O PCB
 FU1 : Fuse T 6.3A 250 V for PCB
 PHC1 * : Optocoupler input circuit
 K1M,K2M : Contactor backup heater
 K3M * : Contactor booster heater
 K5M : Safety contactor BUH (only *9W)
 K*R : Relay on PCB
 M1P : Main supply pump
 M2P # : Domestic hot water pump
 M2S # : 2 way valve for cooling mode
 M3S (*) : 3 way valve for floorheating/domestic hot water
 Q1D, Q2D # : Earth leakage circuit breaker
 Q1L : Thermal protector backup heater
 Q2L * : Thermal protector booster heater
 R1T : Outlet water heat exchanger thermistor
 R1T (A2P) : Ambient sensor user interface
 R1T (A3P) * : Ambient sensor ON/OFF thermostat
 R2T : Outlet backup heater thermistor
 R2T * : 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
 R1H (A3P) * : Humidity sensor
 S1S # : Preferential kWh rate power supply contact
 S2S # : Electrical meter pulse input 1
 S3S # : Electrical meter pulse input 2
 S6S-S9S # : Digital power limitation inputs
 SS1 (A4P) * : Selector switch
 TR1 : Power supply transformer
 X*M : Terminal strip
 X*Y : Connector

POSITION IN SWITCHBOX

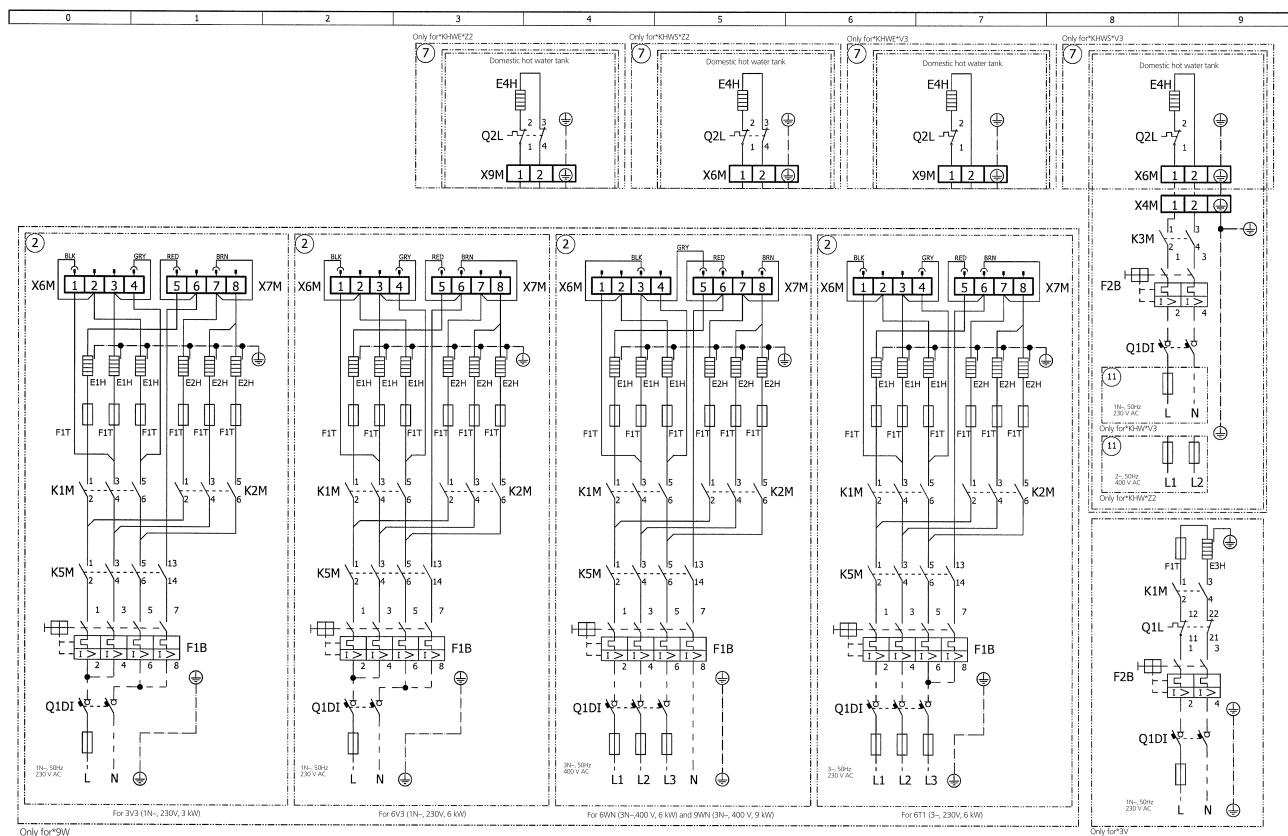


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8 Wiring diagrams

8 - 1 Wiring Diagrams - Three Phase

EHB(H/X)-CB

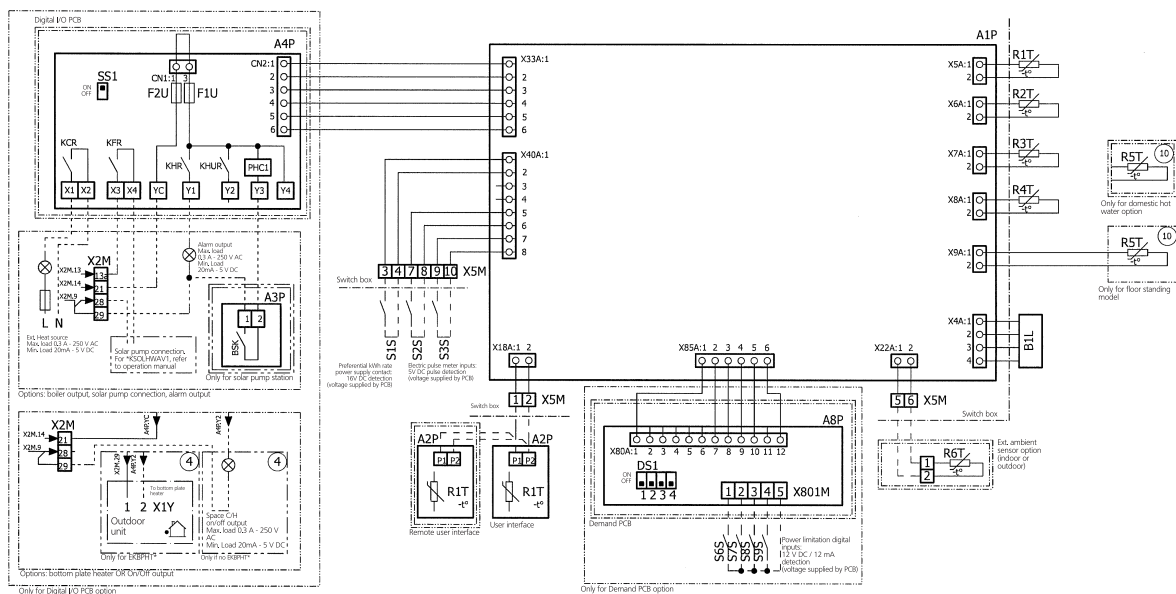


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8 Wiring diagrams

8 - 1 Wiring Diagrams - Three Phase

EHB(H/X)-CB

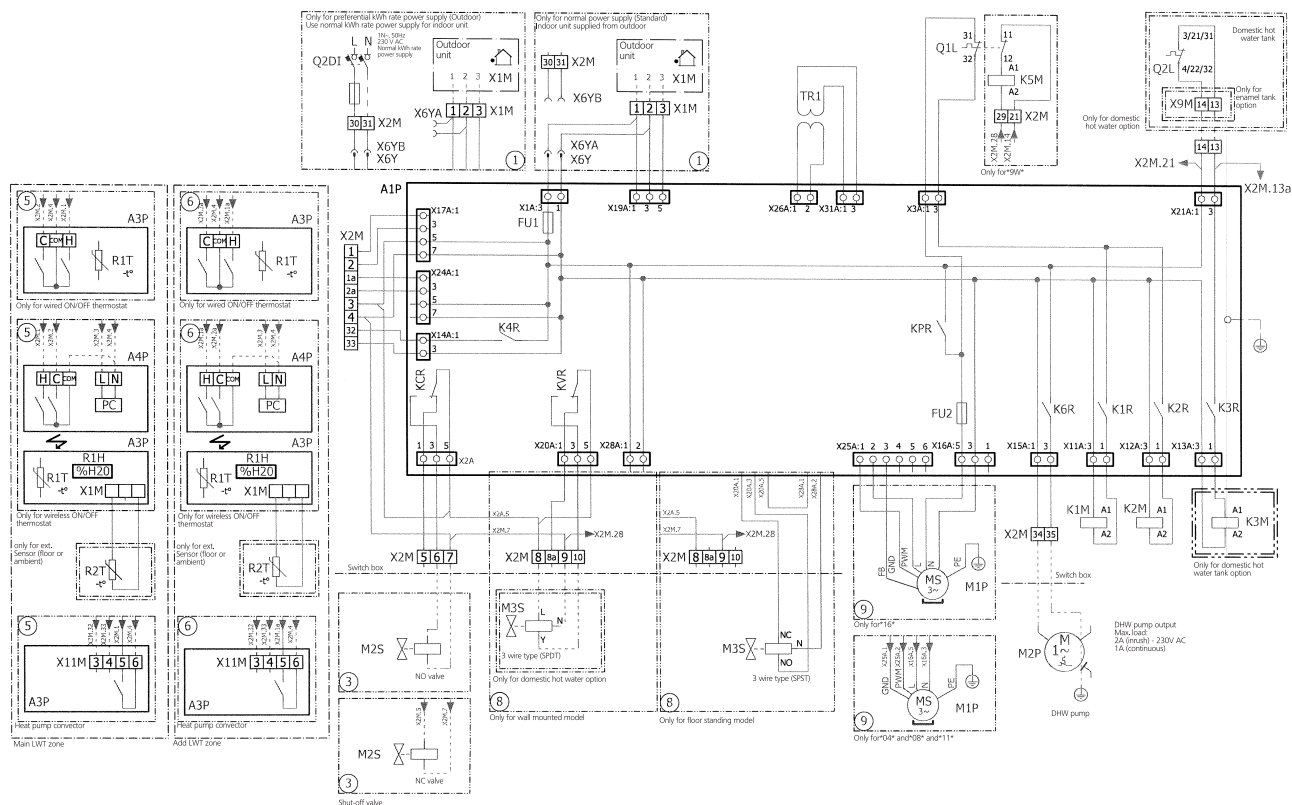


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8 Wiring diagrams

8 - 1 Wiring Diagrams - Three Phase

EHB(H/X)-CB



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9 - 1 External Connection Diagrams

Notes:

- In case of signal cable keep minimum distance to power cables > 5cm
- Available heaters depending on model: see combination table

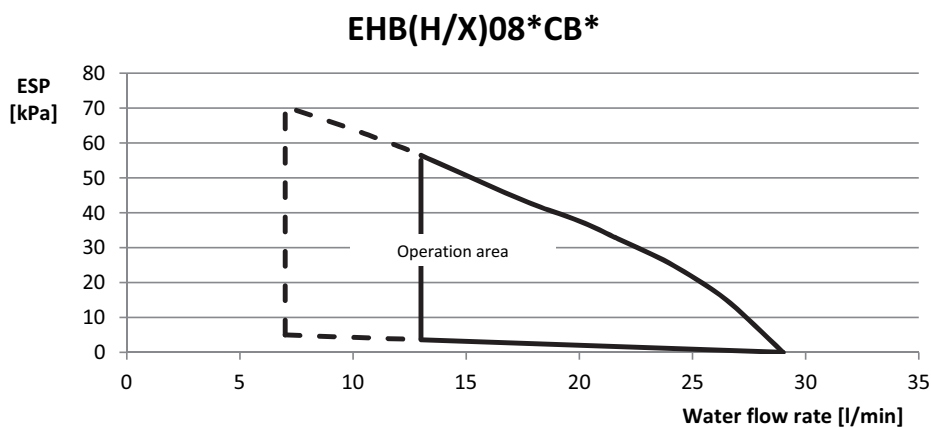
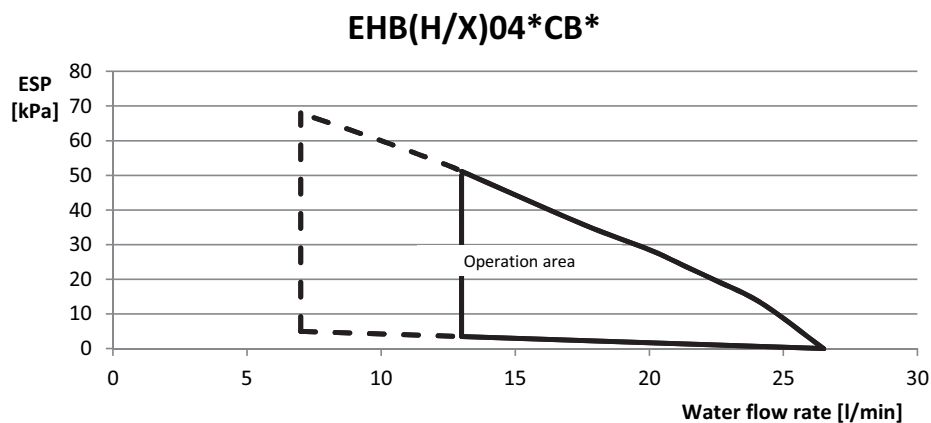


10 Hydraulic performance

10 - 1 Static Pressure Drop Unit

10

EHB(H/X)04-08CB



Operation area is extended to lower flow rates only in case the unit operates with heat pump only.

(Not in startup, no BUH operation, no defrost operation.)

See dashed lines

ESP = External static pressure [kPa]

Space heating/cooling circuit

Flow = Water flow through the unit

Space heating/cooling circuit

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 98/83 EC.

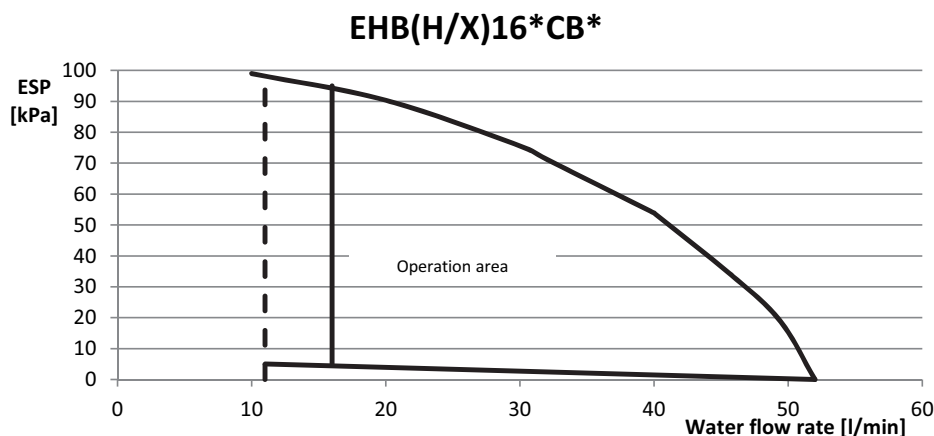
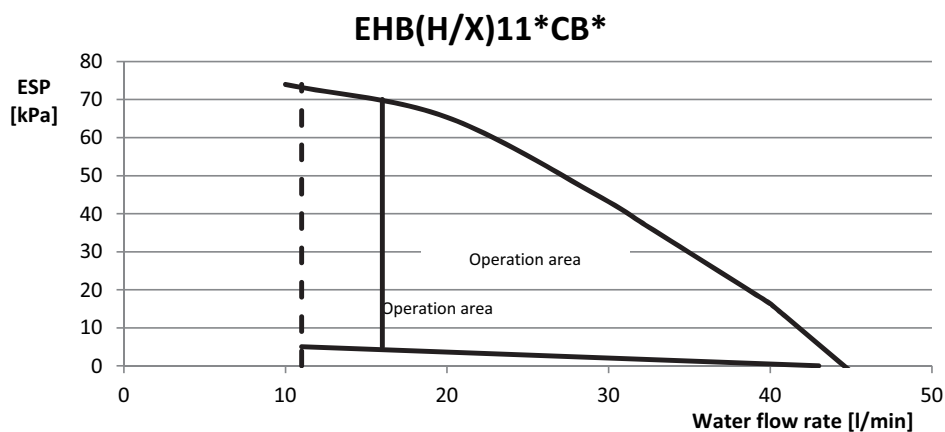
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10 Hydraulic performance

10 - 1 Static Pressure Drop Unit

10

EHB(H/X)11-16CB



Operation area is extended to lower flow rates only in case the unit operates with heat pump only.

(Not in startup, no BUH operation, no defrost operation.)

See dashed lines

ESP = External static pressure [kPa]
 Space heating/cooling circuit
 Flow = Water flow through the unit
 Space heating/cooling circuit

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 98/83 EC.

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