Heating
Technical Data

EABH-D6V

> EABH16DA6V

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EABH-D6V

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1 Features

- PCB board and hydraulic components are located in the front for easy access
- Compact dimensions allows for small installation space, as almost no side clearances are required.
- The unit's sleek design blends in with other household appliances.
- Combine with a stainless steel tank or ECH2O thermal store.
- Energy efficient heating only system based on air to water heat pump technology

Online controller

2 Specifications

2-1 Technical Specifications					EABH16D6V
Power input	Nom.			kW	0.21
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	38.0
	Packed unit			kg	42
Packing	Material				Carton / PP (Straps) / EPS
	Weight			kg	4
Pump	Type				Grundfos UPMXL GEO 25-125 130 PWM
	Nr of speeds				PWM
	Power input			W	179
Expansion vessel	Volume			l	10
	Max. water pressure			bar	3
	Pre pressure			bar	1
Operation range	Heating	Ambient	Min.	°C	0 (1)
			Max.	°C	0 (1)
		Water side	Min.	°C	0 (1)
			Max.	°C	0 (1)
	Indoor installation	Ambient	Min.	°CDB	5 (2)
			Max.	°CDB	35 (3)
	Cooling	Ambient	Min.	°CDB	0 (1)
			Max.	°CDB	0 (1)
		Water side	Min.	°C	0 (1)
			Max.	°C	0 (1)
	Domestic hot water	Water side	Min.	°C	0 (1)
			Max.	°C	0 (1)
Water side Heat exchanger	Water flow rate	Min.		l/min	20.0 (4)
Sound power level	Nom.			dBA	44.0 (5)
Sound pressure level	Nom.			dBA	30.0 (6)
Water filter	Diameter perforations			mm	0.8
	Material				Stainless steel / Plastic
Water circuit	Piping connections diameter			inch	G 1" (female)
	Piping material				Cu
	Internal piping diameter			inch	1-1/4"
	Piping			inch	1"
	Safety valve			bar	3
	Manometer				Digital
	Drain valve / fill valve				No
	Shut off valve				Yes
	flowswitch				Yes
	Air purge valve				Yes
	Total water volume			l	2.2 (7)
	Minimum water volume in the system for cooling			l	20 (8)
	Minimum water volume in the system for heating			l	20 (8)
Safety devices	Item	01			Thermal cut out
Heater capacity	Step 1			kW	2
	Step 2			kW	2 or 4
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium

2 Specifications

2-2 Electrical Specifications					EABH16D6V
Power supply	Name				(9)
	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 (2)
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				Prewired
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
Wiring connections-For connection with M2S	Quantity				2
	Remark				Voltage: 230V / Max. current: 100mA / Min. 0.75mm²
Wiring connections-For connection with optional FWXV* (demand input and output)	Quantity				4
	Remark				100 mA, minimum 0.75 mm²

Notes

(1) Refer to operation range of the unit.

(2) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram)

(3) Depends on operation mode, refer to installation manual.

(4) 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).

(5) 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°.

(6) Value 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 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.

(7) Including piping + back-up heater; excluding expansion vessel

(8) Excluding the water in the unit. This minimum water volume is sufficient for most applications. During critical processes extra water may be required.

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

3 Electrical data

3 - 1 Electrical Data

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W

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·)**		**6**	**3 - 6**	**3 - 9**	**·3 - 6· (in case of emergency: ·3 - 9·)**		
	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%				
	Current	Nominal running current		A	17,4	26,1	17,4	26,1	15	8,7	13	8,7	13	
		Zmax (backup he	(2)	Ω						-				
				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)	Ω	-									
				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.

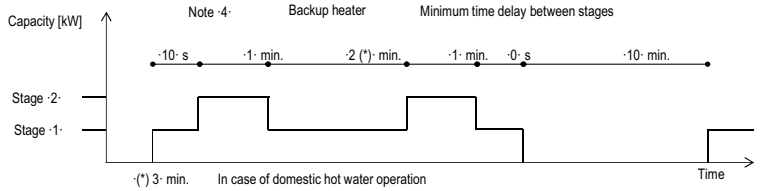
(2) In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax.

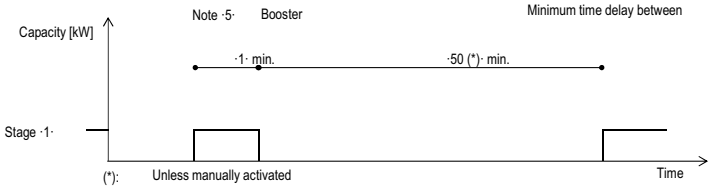
(3) The equipment complies with EN/IEC 61000-3-12.

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

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W

Factory-mounted equipment for ·EAB(H/X)16DA*·

Description	EAB(H/X)16DA*	
Heating only model ·EABH*·	6V (8)	9W (8)
Reversible model ·EABX*·	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 ·*HB(H/X)(04/08)DA*·

Description		EPGA11DAV3	EPGA14DAV3	EPGA16DAV3
EABH16DA*	Heating only	o	o	o
EABX16DA*	Reversible	o	o	o

Kit availability for indoor units

Reference	Description		EAB*16DA*		
EABH*	Heating only indoor unit		6V		9W
EABX*	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
EKHWS150D3V3	Domestic hot water tank ·150 l 1~230 V·		o		o
EKHWS180D3V3	Domestic hot water tank ·180 l 1~230 V·		o		o
EKHWS200D3V3	Domestic hot water tank ·200 l 1~230 V·		o		o
EKHWS250D3V3	Domestic hot water tank ·250 l 1~230 V·		o		o
EKHWS300D3V3	Domestic hot water tank ·300 l 1~230 V·		o		o
EKHWSU150D3V3	Domestic hot water tank ·150 l 1~230 V·		o		o
EKHWSU180D3V3	Domestic hot water tank ·180 l 1~230 V·		o		o
EKHWSU200D3V3	Domestic hot water tank ·200 l 1~230 V·		o		o
EKHWSU250D3V3	Domestic hot water tank ·250 l 1~230 V·		o		o
EKHWSU300D3V3	Domestic hot water tank ·300 l 1~230 V·		o		o
EKHWP500B	Domestic hot water tank with solar connection	*(9)	o		o
EKHWP500PB	Domestic hot water tank with solar connection	*(9)	o		o
EKHY3PART	Third-party tank connection kit for thermistor pocket		o		o
EKHY3PART2	Third-party tank connection kit for thermostat contact		o		o
BZKA7V3	Bizone kit		o		o
KRCS01-1	Remote indoor sensor	*(5)	o		o
EKRSCA1	Remote sensor for outdoor	*(5)	o		o
BRP069A61	LAN adapter for smartphone control		o		o
BRP069A62	LAN adapter for smartphone control		o		o
EKCC8-W	Universal centralised user interface		o		o
EKHBCONV	Conversion kit: heating only to reversible.		o		o
FWXV15AVEB	Heat pump convector	*(6)	o		o
FWXV20AVEB	Heat pump convector	*(6)	o		o
EKVKHPC	Heat pump convector valve kit		o		o
EKRTWA	Wired room thermostat		o		o
EKRTR1	Wireless room thermostat		o		o
EKRTETS	External sensor room thermostat	*(7)	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 ·*KRTR1·
(8) The backup heater capacity depends on a user interface setting.
(9) Dedicated connection kit available.

Remark

Other combinations than mentioned in this combination table are prohibited.

Kit availability for domestic hot water tanks

Reference	Description	*KHWP*	
KHWP	Domestic hot water tank with solar connection	500B	500PB
*KSRPS4A	Solar kit	o	o

Kit availability for outdoor units

		EPGA11DAV3	EPGA14DAV3	EPGA16DAV3
EKBPH140L7	Bottom plate heater	o	o	o

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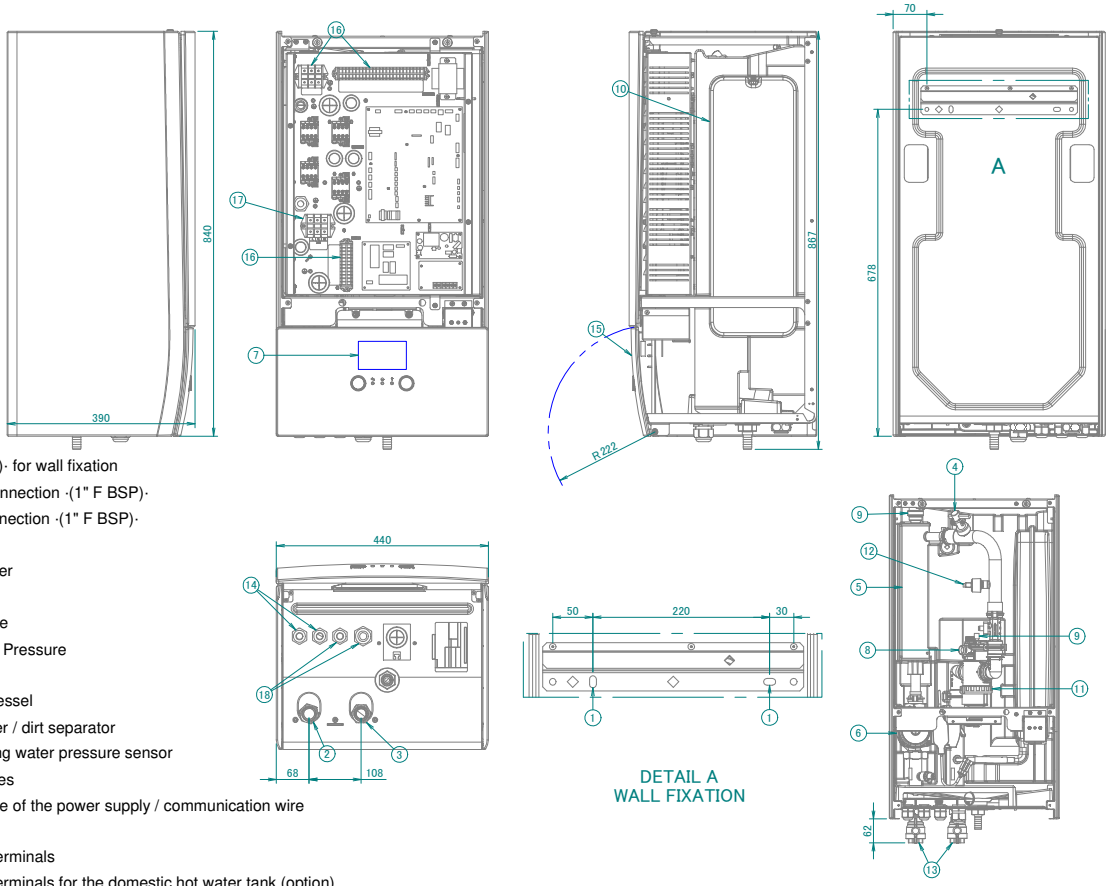
5 Dimensional drawings

5 - 1 Dimensional Drawings

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



1. Holes ·(Ø8.5)· for wall fixation
2. Water out connection ·(1" F BSP)·
3. Water in connection ·(1" F BSP)·
4. Flow switch
5. Backup heater
6. Pump
7. User interface
8. Safety valve Pressure
9. Air purge
10. Expansion vessel
11. Magnetic filter / dirt separator
12. Space heating water pressure sensor
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. Options

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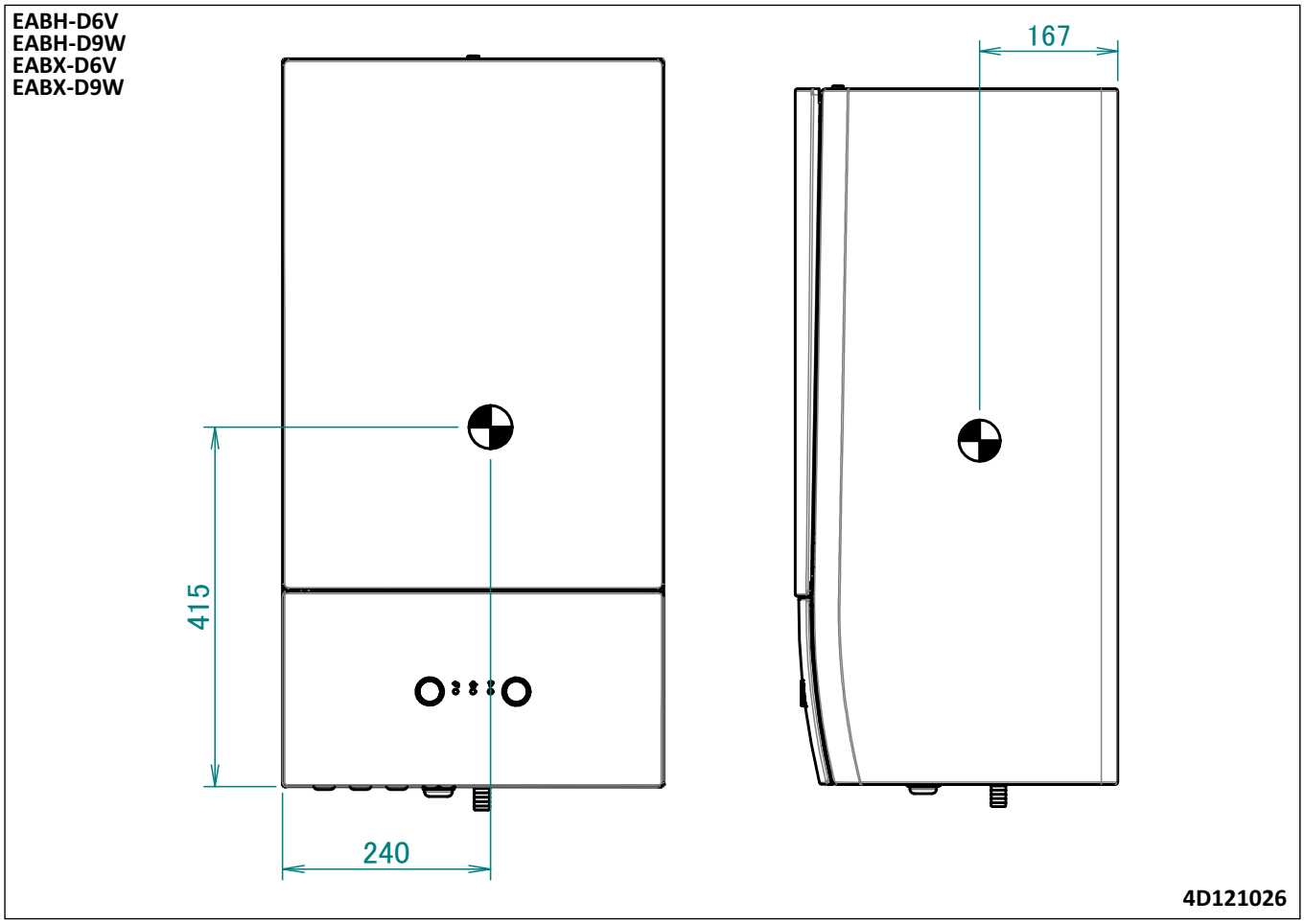
6 Centre of gravity

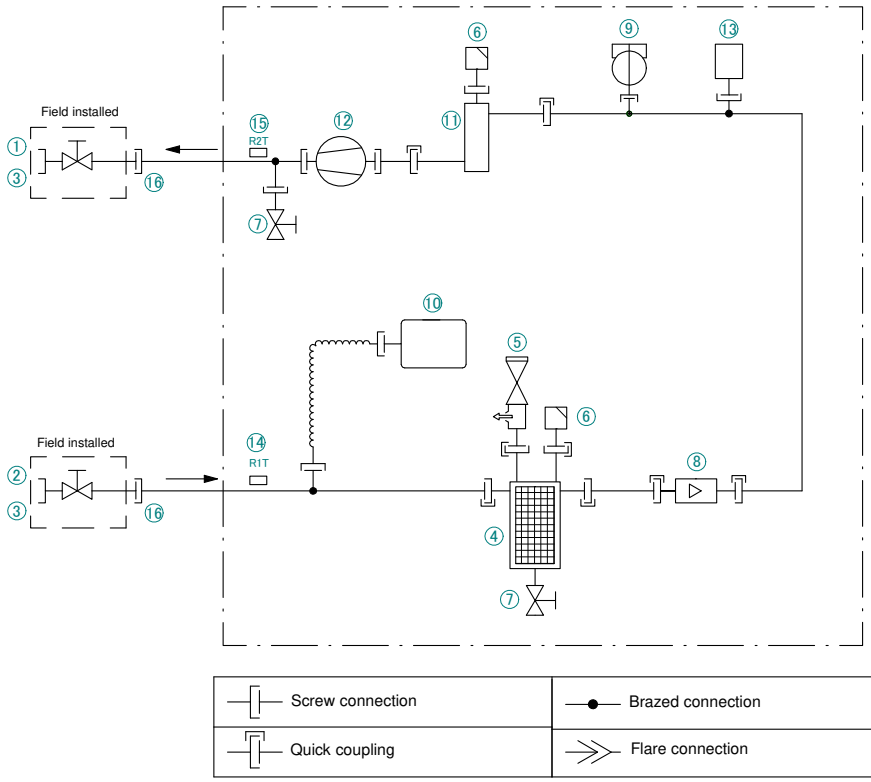
6 - 1 Centre of Gravity



7 Piping diagrams

7 - 1 Piping Diagrams

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



① Space heating - water OUT
Field piping connections
② Water in connection ·1"·
③ Shut-off valve ·1"· (male-female)
④ Magnetic filter / dirt separator
⑤ Safety valve
⑥ Air purge
⑦ Drain valve
⑧ Flow sensor
⑨ Flow switch
⑩ Expansion vessel
⑪ Backup heater
⑫ Pump
⑬ Space heating water pressure sensor
⑭ R1T – Inlet water thermistor
⑮ R2T – Outlet water backup heater thermistor
⑯ Screw connection ·1"·

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8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W

NOTES to go through before starting the unit

X1M : Main terminal
X2M : Field wiring terminal for AC
X5M : Field wiring terminal for DC
X6M : BUH Power supply terminal
X7M, X8M : BSH Power supply 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.

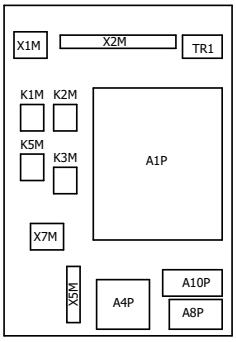
Backup heater power supply
- ☐ 6T1 (3~, 230V, 6kW)
- ☐ 6V (1N~, 230V, 6kW)
- ☐ 6WN/9WN (3N~, 400V, 6/9kW)

User installed options:
- ☐ LAN adapter
- ☐ Domestic hot water tank
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Digital I/O PCB
- ☐ Demand PCB
- ☐ Bottom plate heater

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



LEGEND

Translation can be found in the installation manual.

* : optional # : field supply

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
A10P		MMI PSU PCB
A11P		MMI main PCB
A12P		MMI display PCB
A13P	*	LAN adapter
A14P	*	user interface PCB
A15P	*	receiver PCB (wireless On/OFF thermostat)
B1L		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 5 A 250 V for PCB
FU2 (A10P)		fuse T 1.6 A 250 V for PCB
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 floorheating /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)		inlet water 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)
R5T		domestic hot water thermistor
R6T	*	external indoor or outdoor ambient thermistor
S1L		flow switch
S1S	#	preferential kWh rate PS contact
S2S	#	electrical meter pulse input 1
S3S	#	electrical meter pulse input 2
S6S-S9S	*	digital power limitation inputs
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
X*, X*A, J* X*Y*, Y*		connector
X*M		terminal strip

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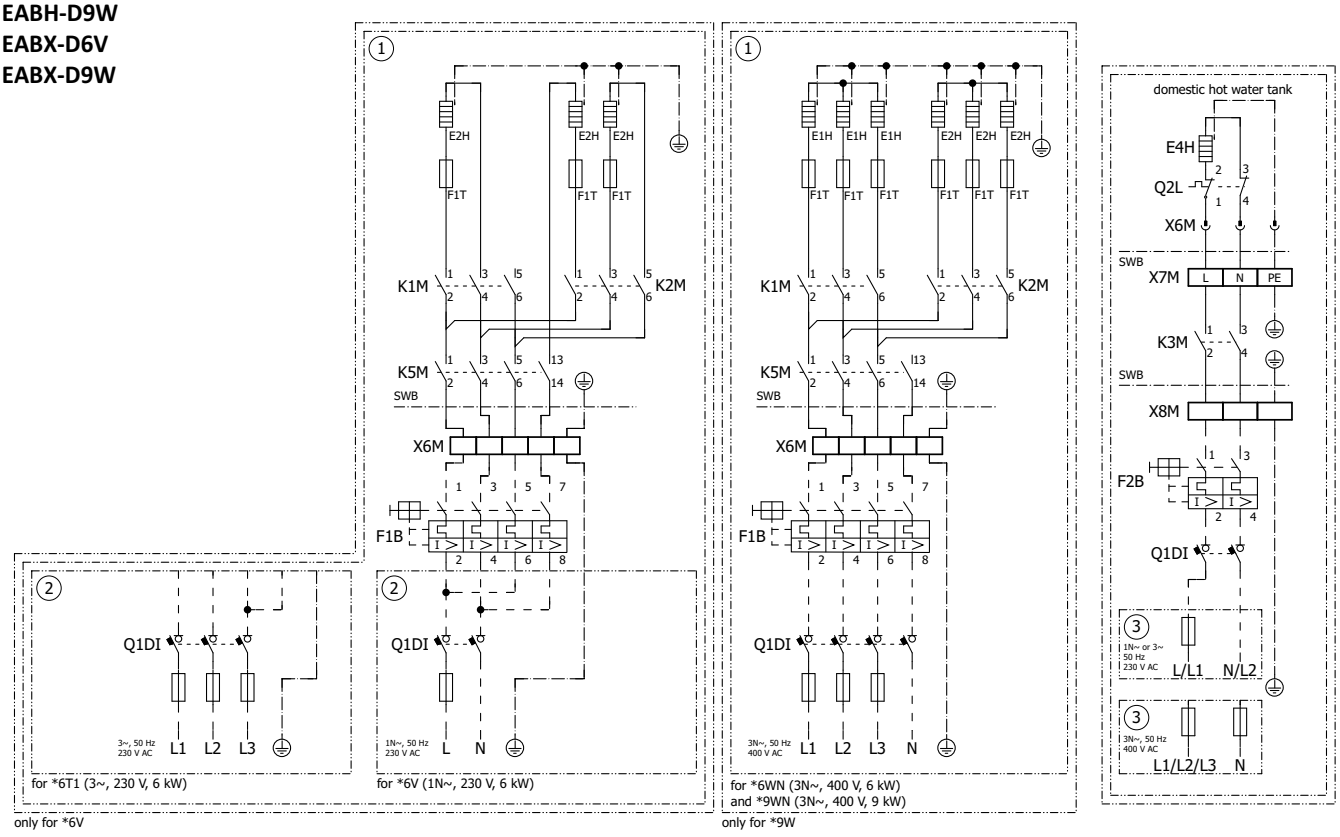
EABH-D6V
EABX-D6V
EABX-D9W



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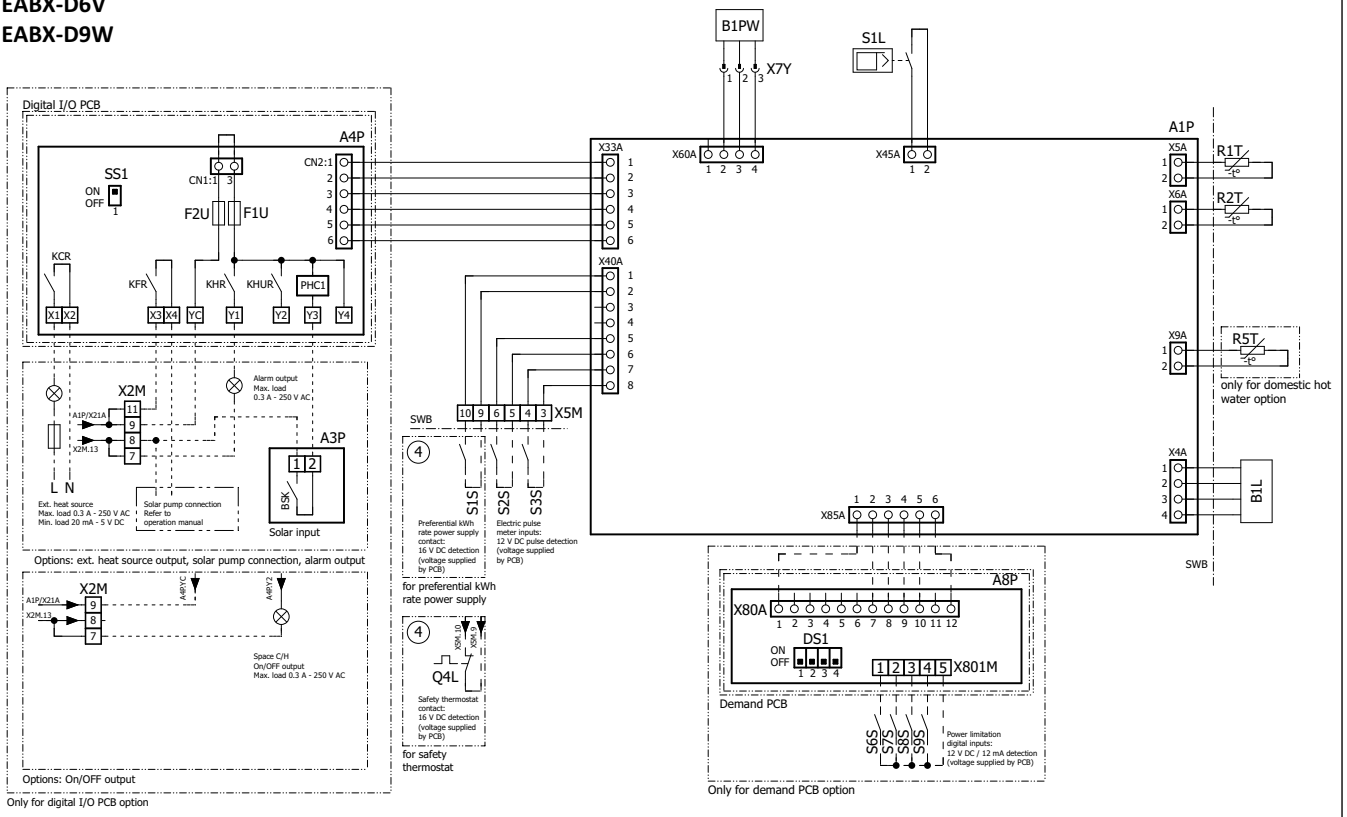
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



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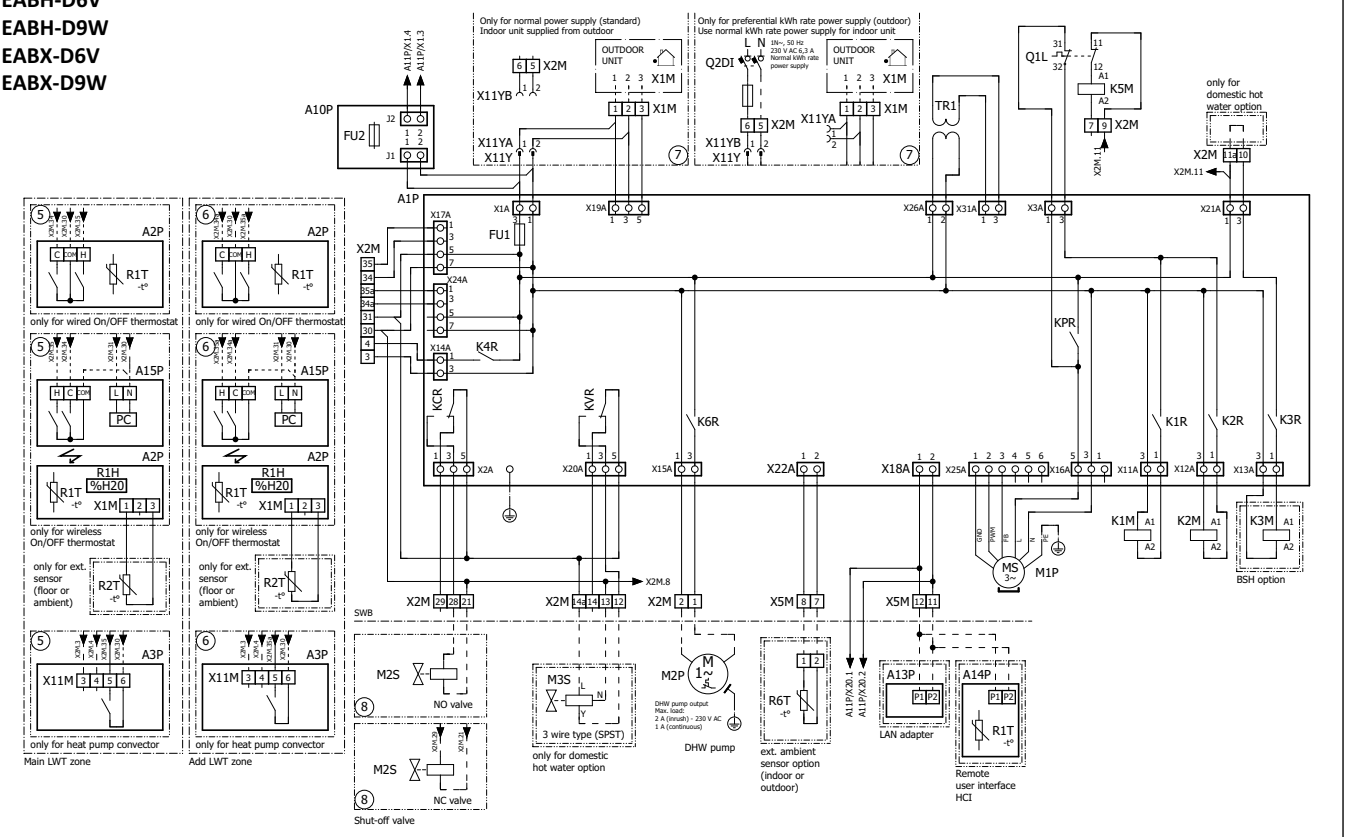
EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



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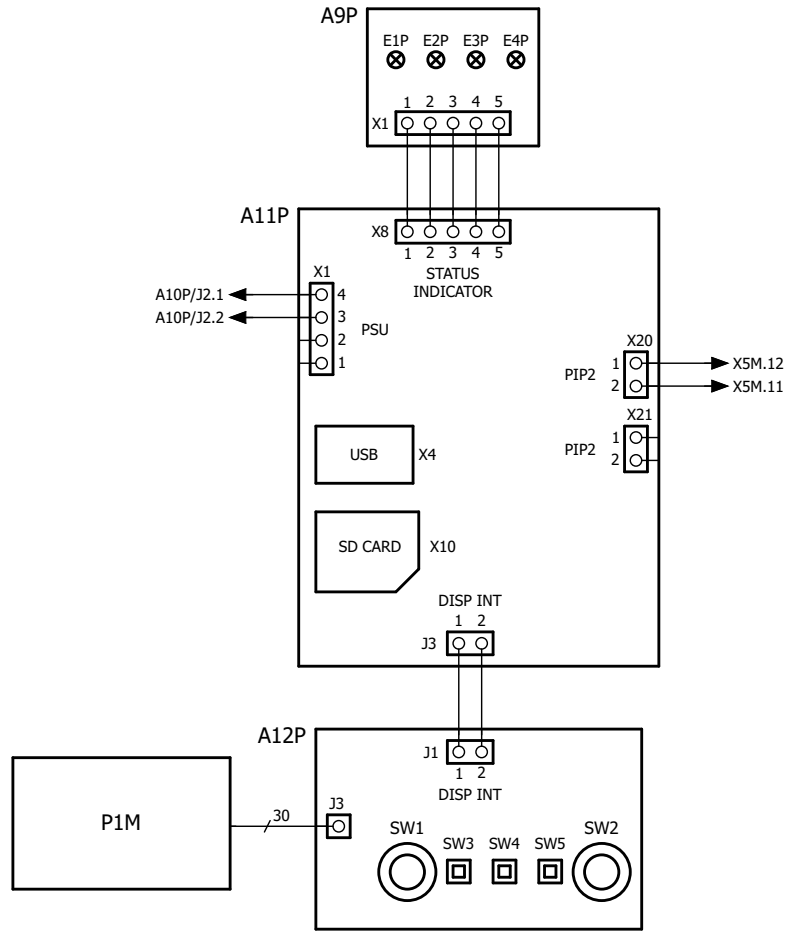
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



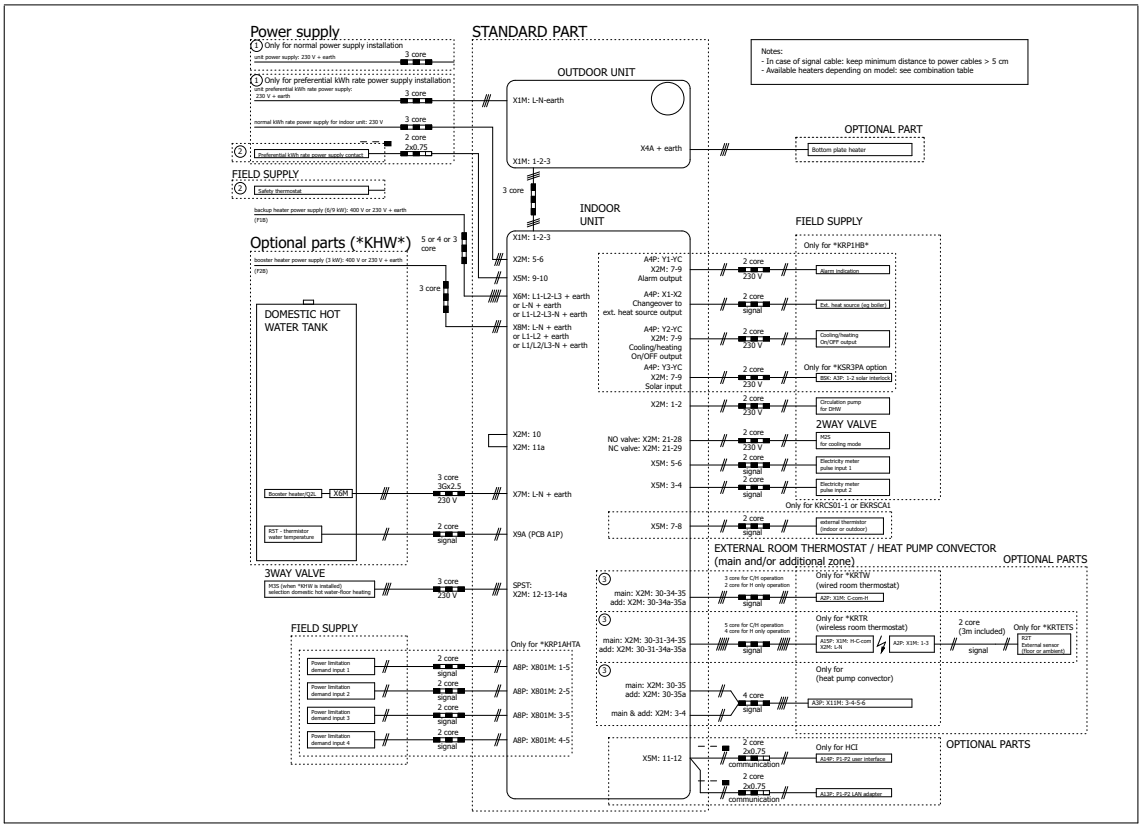
9 External connection diagrams

9 - 1 External Connection Diagrams

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W

Electrical connection diagram Altherma Wallmounted Gas Injection

For more details
please check unit wiring



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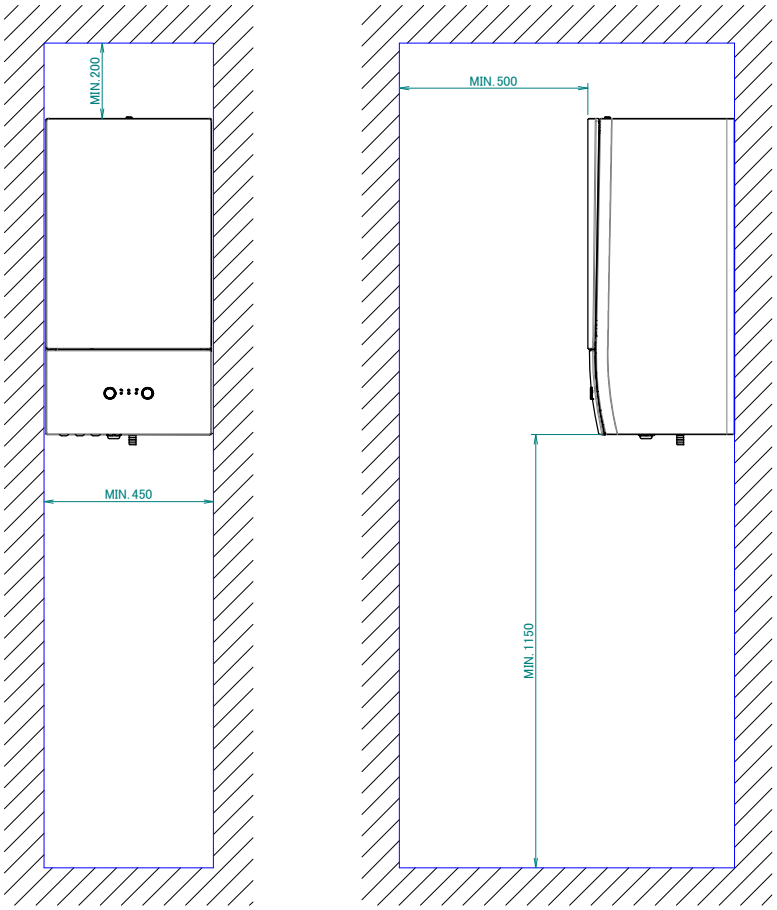
10 Installation

10 - 1 Installation Method

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



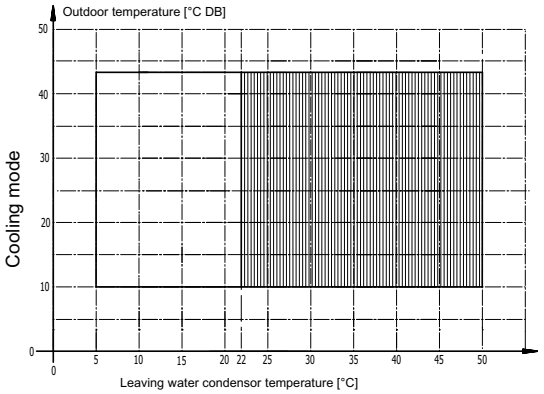
3D121023

11 Operation range

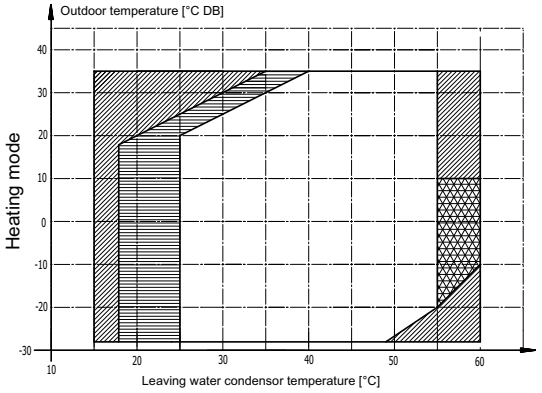
11 - 1 Operation Range

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W
EAVH-D6V(G)
EAVH-D9W(G)
EAVX-D6V(G)
EAVX-D9W(G)
EAVZ-D6W
EAVZ-D9W

1-phase DA series 11~16 kW class



1-phase DA series 11~16 kW class



Legend

- Backup heater only operation / No outdoor unit operation
- Outdoor unit operation if setpoint ≥ 25°C
- Pull-down area
- **Outdoor unit operation if setpoint >55°C and ΔT = 8°C (ΔT = outlet temperature – inlet temperature)**

Indoor
DA series Standard

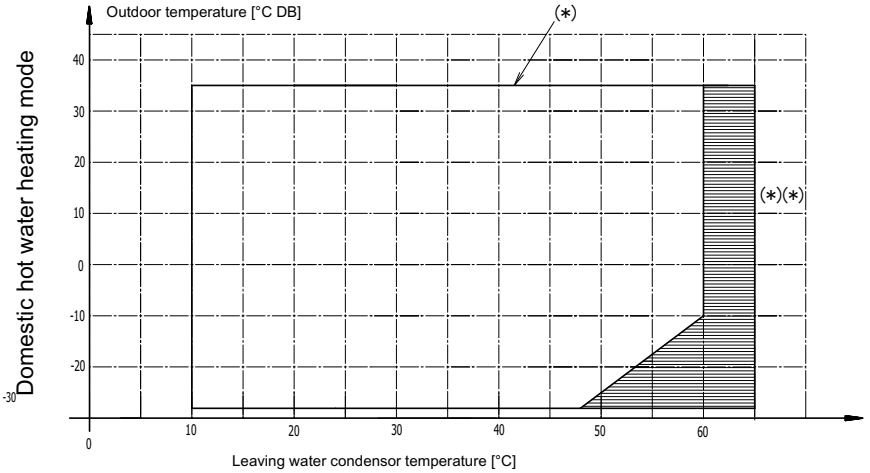
Remark
In restricted power supply mode, the outdoor unit, booster heater and backup heater can only operate separately.

Warning
In areas with low ambient temperatures and high humidity, or in areas with heavy snowfall, remove the suction grille to ensure proper operation.
Non-exhaustive list of areas: Austria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Norway, Poland, Romania, Serbia, Slovakia, Sweden, …

3D121180A

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W
EAVH-D6V(G)
EAVH-D9W(G)
EAVX-D6V(G)
EAVX-D9W(G)
EAVZ-D6W
EAVZ-D9W

1-phase DA series 11~16 kW class



Indoor
DA series Standard

Legend

Backup heater only operation (or booster heater, if part of the system) to reach a tank temperature of 60°C.

(∗) System operation: the system consists of an outdoor unit and indoor unit, and depending on the system, a booster heater and/or a backup heater.

In heat pump only operation, the heat pump can create a maximum domestic hot water temperature up to 56°C (depending on outdoor ambient condition).

(∗)(∗) Tank temperature up to 75°C only possible with booster heater only operation (if available in the system).

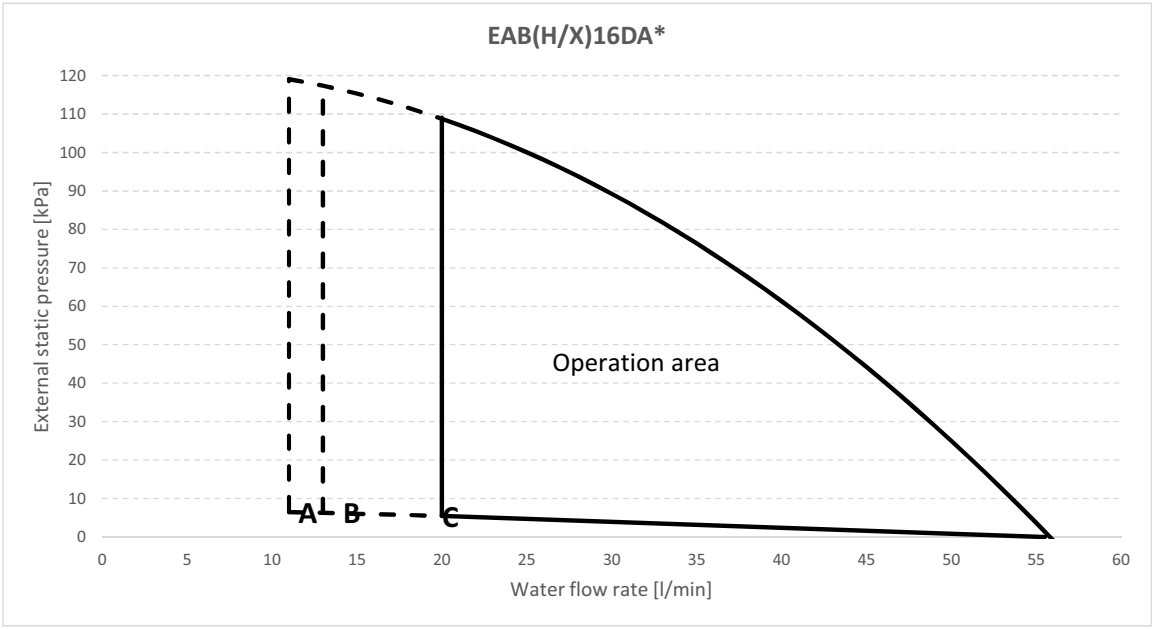
Remark
In restricted power supply mode (EKHW* only), the outdoor unit, booster heater and backup heater can only operate separately.

3D121181

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

EABH-D6V
EABH-D9W
EABX-D6V
EABX-D9W



A Minimum water flow rate during normal operation
B Minimum water flow rate during backup heater operation
C Minimum water flow rate during defrost operation

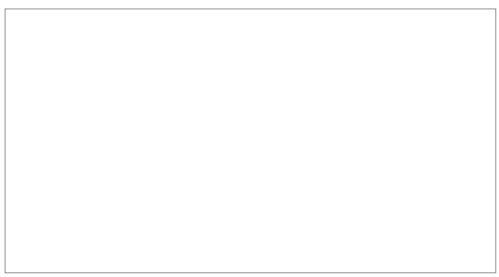
Operation area is extended to lower flow rates only in case the unit operates with heat pump only.
(Not in startup, no BUH operation, no defrost operation.)
See dashed lines

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.

4D121019

Daikin Europe N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende



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