

Daikin Altherma high temperature split Air Conditioning Technical Data

ETBH-D6V /
ETBH-D9W /
ETBX-D6V /
ETBX-D9W



ETBH16DA6V
ETBH16DA9W
ETBX16DA6V
ETBX16DA9W

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ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-D9W

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1 Features

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

Wall mounted reversible air to water heat pump

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- › Inclusion of all hydraulic components means no third party components are required
- › 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.
- › Quick configuration in 9 steps in a high resolution colour interface wizard



Online
controller

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

Technical specifications					ETBH16D6V	
Heater capacity	Step 1		kW		2	
	Step 2		kW		2 or 4	
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	Nr of speeds				PWM	
	Power input		W		179	
Water side Heat exchanger	Water	Min.	l/min		20.0 (1)	
Expansion vessel	Volume		l		10	
	Max. water pressure		bar		3	
	Pre pressure		bar		1	
Water filter	Diameter perforations		mm		0.8	
	Material				Stainless steel / Plastic	
General	Supplier/	Name or trademark				Daikin Europe N.V.
	Manufacturer details	Name and address				Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter		inch		G 1" (female)	
	Piping material				Cu	
	Internal piping diameter		inch		1-1/4"	
	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 (2)	
Water circuit	Minimum water volume in the system for cooling		l		20 (3)	
	Minimum water volume in the system for heating		l		20 (3)	
Sound power level	Nom.		dBA		44.0 (4)	
Sound pressure level	Nom.		dBA		30.0 (5)	
Operation range	Heating	Ambient	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
		Water side	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
	Indoor installation	Ambient	Min.	°CDB	5	
			Max.	°CDB	35 (7)	
	Cooling	Ambient	Min.	°CDB	0 (6)	
			Max.	°CDB	0 (6)	
		Water side	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
	Domestic hot water	Water side	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
	Safety devices	Item	01		Thermal cut out	
	Electrical specifications					ETBH16D6V
Power supply	Name				See note 9	
	Voltage range	Min.	%		-10	
		Max.	%		10	
IP class	IP				IP X0B	
Electric heater	Power supply	Name		6V3		
		Phase		1~ / 3~		
		Frequency		50		
		Voltage		230		
	Current	Maximum running current		A		
		Zmax	List	Ω		
		Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12		
	Recommended fuses		A		20.000 (8)	

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

2

Electrical specifications			ETBH16D6V
Wiring connections	Communication cable	Quantity	3
		Remark	2.5 mm ²
	Electric meter	Quantity	2
		Remark	Minimum 0.75 mm ² (5VDC pulse detection)
	Preferential kWh rate power supply	Quantity	Power: 2
		Remark	Power 6.3A (Select diameter and type according to national and local regulations)
	Domestic hot water pump	Quantity	2
		Remark	Minimum 0.75 mm ² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity	Prewired
	For connection with R6T	Quantity	2
		Remark	Minimum 0.75 mm ²
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with M2S	Quantity	2
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with optional FWXY* (demand	Quantity	4
		Remark	100 mA, minimum 0.75 mm ²

(1) 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). |

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

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

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

(5) 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. |

(6) Refer to operation range of the unit. |

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

(8) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(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.

Technical specifications				ETBH16D9W
Heater capacity	Step 1		kW	3
	Step 2		kW	max. 6 kW
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	Nr of speeds			PWM
	Power input		W	179
Water side Heat exchanger	Water flow rate	Min.	l/min	20.0 (1)
Expansion vessel	Volume		l	10
	Max. water pressure		bar	3
	Pre pressure		bar	1
Water filter	Diameter perforations		mm	0.8
	Material			Stainless steel / Plastic
General	Supplier/Manufacturer details	Name or trademark		Daikin Europe N.V.
		Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter		inch	G 1" (female)
	Piping material			Cu
	Internal piping diameter		inch	1-1/4"
	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 (2)	

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

Technical specifications					ETBH16D9W
Water circuit	Minimum water volume in the system I for cooling		I		20 (3)
	Minimum water volume in the system I for heating		I		20 (3)
Sound power level	Nom.		dBA		44.0 (4)
Sound pressure level	Nom.		dBA		30.0 (5)
Operation range	Heating	Ambient	Min.	°C	0 (6)
			Max.	°C	0 (6)
		Water side	Min.	°C	0 (6)
			Max.	°C	0 (6)
	Indoor installation	Ambient	Min.	°CDB	5
			Max.	°CDB	35 (7)
		Cooling	Min.	°CDB	0 (6)
			Max.	°CDB	0 (6)
	Domestic hot water	Water side	Min.	°C	0 (6)
			Max.	°C	0 (6)
			Min.	°C	0 (6)
			Max.	°C	0 (6)
Safety devices	Item	01			Thermal cut out

Electrical specifications					ETBH16D9W
Power supply	Name				See note 9
	Voltage range	Min.			-10
		Max.			10
IP class	IP				IP X0B
Electric heater	Power supply	Name			9W
		Phase			3~
		Frequency		Hz	50
		Voltage		V	400
	Current	Maximum running current		A	13.0
		Recommended fuses		A	20.000 (8)
Wiring connections	Communication cable	Quantity			3
		Remark			2.5 mm ²
	Electric meter	Quantity			2
		Remark			Minimum 0.75 mm ² (5VDC pulse detection)
	Preferential kWh rate power supply	Quantity			Power: 2
		Remark			Power 6.3A (Select diameter and type according to national and local regulations)
	Domestic hot water pump	Quantity			2
		Remark			Minimum 0.75 mm ² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity			Prewired
		Remark			
	For connection with R6T	Quantity			2
		Remark			Minimum 0.75 mm ²
	For connection with A3P	Quantity			Depends on thermostat type, cf. installation manual
		Remark			Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with M2S	Quantity			2
		Remark			Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with optional FWXV* (demand	Quantity			4
		Remark			100 mA, minimum 0.75 mm ²

(1) 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). |

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

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

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

(5) 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. |

(6) Refer to operation range of the unit. |

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

(8) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(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.

Technical specifications					ETBX16D6V
Heater capacity	Step 1		kW		2
	Step 2		kW		2 or 4
Power input	Nom.		kW		0.21
Casing	Colour				White + Black
	Material				Resin, sheet metal

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

2

Technical specifications					ETBX16D6V
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
Packing	Packed unit		kg		42
	Material				Carton / PP (Straps) / EPS
Pump	Weight		kg		4
	Nr of speeds				PWM
Water side Heat exchanger	Power input				179
		Water Min. flow rate	l/min		20.0 (1)
Expansion vessel	Volume		l		10
	Max. water pressure		bar		3
	Pre pressure		bar		1
Water filter	Diameter perforations		mm		0.8
	Material				Stainless steel / Plastic
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter		inch		G 1" (female)
	Piping material				Cu
	Internal piping diameter		inch		1-1/4"
	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 (2)
Water circuit	Minimum water volume in the system for cooling		l		20 (3)
	Minimum water volume in the system for heating		l		20 (3)
Sound power level	Nom.		dB(A)		44.0 (4)
Sound pressure level	Nom.		dB(A)		30.0 (5)
Operation range	Heating	Ambient	Min.	°C	0 (6)
			Max.	°C	0 (6)
		Water side	Min.	°C	0 (6)
			Max.	°C	0 (6)
	Indoor installation	Ambient	Min.	°CDB	5
			Max.	°CDB	35 (7)
		Cooling	Min.	°CDB	0 (6)
			Max.	°CDB	0 (6)
	Domestic hot water	Water side	Min.	°C	0 (6)
			Max.	°C	0 (6)
		Water side	Min.	°C	0 (6)
			Max.	°C	0 (6)
Safety devices	Item	01			Thermal cut out

Electrical specifications					ETBX16D6V
Power supply	Name		See note 9		
	Voltage range	Min. Max.	% %	-10 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		26.0	
		Zmax	List	Ω	0.22
		Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Recommended fuses		A	20.000 (8)	

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

Electrical specifications			ETBX16D6V
Wiring connections	Communication cable	Quantity	3
		Remark	2.5 mm ²
	Electric meter	Quantity	2
		Remark	Minimum 0.75 mm ² (5VDC pulse detection)
	Preferential kWh rate power supply	Quantity	Power: 2
		Remark	Power 6.3A (Select diameter and type according to national and local regulations)
	Domestic hot water pump	Quantity	2
		Remark	Minimum 0.75 mm ² (2A inrush, 1A continuous)
	For power supply back-up heater	Quantity	Prewired
	For connection with R6T	Quantity	2
		Remark	Minimum 0.75 mm ²
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with M2S	Quantity	2
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with optional FWXV* (demand	Quantity	4
		Remark	100 mA, minimum 0.75 mm ²

(1) 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). |

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

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

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

(5) 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. |

(6) Refer to operation range of the unit. |

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

(8) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(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.

Technical specifications				ETBX16D9W
Heater capacity	Step 1		kW	3
	Step 2		kW	max. 6 kW
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	Nr of speeds			PWM
	Power input		W	179
Water side Heat exchanger	Water Min. flow rate		l/min	20.0 (1)
Expansion vessel	Volume		l	10
	Max. water pressure		bar	3
	Pre pressure		bar	1
Water filter	Diameter perforations		mm	0.8
	Material			Stainless steel / Plastic
General	Supplier/ Manufacturer details	Name or trademark		Daikin Europe N.V.
		Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium
Water circuit	Piping connections diameter		inch	G 1" (female)
	Piping material			Cu
	Internal piping diameter		inch	1-1/4"
	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 (2)
Water circuit	Minimum water volume in the system for cooling		l	20 (3)
	Minimum water volume in the system for heating		l	20 (3)

2 Specifications

1 - 1 ETBX-D9W, ETBH-D9W, ETBX-D6V, ETBH-D6V

2

Technical specifications					ETBX16D9W	
Sound power level	Nom.		dB(A)	44.0 (4)		
Sound pressure level	Nom.		dB(A)	30.0 (5)		
Operation range	Heating	Ambient	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
		Water side	Min.	°C	0 (6)	
			Max.	°C	0 (6)	
	Indoor installation	Ambient	Min.	°CDB	5	
			Max.	°CDB	35 (7)	
	Cooling	Ambient	Min.	°CDB	0 (6)	
			Max.	°CDB	0 (6)	
		Domestic hot water	Water side	Min.	°C	0 (6)
				Max.	°C	0 (6)
				Min.	°C	0 (6)
				Max.	°C	0 (6)
Safety devices	Item	01	Thermal cut out			

Electrical specifications					ETBX16D9W
Power supply	Name				See note 9
	Voltage range	Min.	%		-10
		Max.	%		10
IP class	IP				IP X0B
Electric heater	Power supply	Name			9W
		Phase			3~
		Frequency		Hz	50
		Voltage		V	400
	Current		Maximum running current		13.0
	Recommended fuses		A		20.000 (8)
Wiring connections	Communication cable	Quantity			3
		Remark			2.5 mm ²
	Electric meter	Quantity			2
		Remark			Minimum 0.75 mm ² (5VDC pulse detection)
	Preferential kWh rate power supply	Quantity			Power: 2
		Remark			Power 6.3A (Select diameter and type according to national and local regulations)
	Domestic hot water pump	Quantity			2
		Remark			Minimum 0.75 mm ² (2A inrush, 1A continuous)
	For power supply back-up heater		Quantity		Prewired
	For connection with R6T	Quantity			2
		Remark			Minimum 0.75 mm ²
	For connection with A3P	Quantity			Depends on thermostat type, cf. installation manual
		Remark			Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with M2S	Quantity			2
		Remark			Voltage: 230V / Max. current: 100mA / Min. 0.75mm ²
	For connection with optional FWXV* (demand	Quantity			4
		Remark			100 mA, minimum 0.75 mm ²

(1) 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). |

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

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

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

(5) 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. |

(6) Refer to operation range of the unit. |

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

(8) 4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |

(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

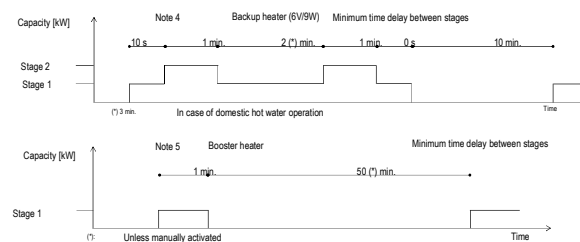
ETBH-D6V

ETBH-D9W

ETBX-D6V

ETBX-D9W

Electrical specifications of the backup heaters and booster heaters																										
Backup heater	Type			6V				9W																		
				2-4 (in case of emergency: 2-6)				3-6		3-9		3-6 (in case of emergency: 3-9)														
	Capacity setting			2-4		2-6		2		2		2														
	Capacity stage			2		2		1		2		2														
	Capacity stage 1			2		2		2		3		3														
Backup heater	Capacity stage 2			4		6		4		6		9														
	Minimum time delay between stages			Note 4				Note 4																		
	Power supply		Phase	1~				3~		3~																
	(1)	Frequency	Hz	50				50																		
			Voltage	230 ±10%				400 ±10%																		
Current	Nominal running current		A	17,4		26,1		17,4		26,1		15														
	Zmax (backup heater)		Ω	8,7				13		8,7																
	Minimum Ssc value		kVA	0,22				-		-																
Booster heater (optional) (*KH W* models)	f)																									
	Capacity setting			kW				3																		
	Capacity stage							1																		
	Minimum time delay between stages							Note 5																		
	Nominal running current			+EK*V3				13																		
	Booster heater			+EK*Z2				75																		
	Zmax		Booster heater	(2)	Ω				-																	
				Complex					-																	
	Nominal running current		Backup heater +	Booster heater	A				30,4 (17,4+13)		39,1 (26,1+13)		30,4 (17,4+13)		39,1 (26,1+13)		28 (15+7,5)		21,7 (8,7+13)		26 (13+13)		21,7 (8,7+13)		26 (13+13)	
					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)		20,5 (13+7,5)							
Minimum Ssc value		Backup heater +	Booster heater + EK*V3 Booster heater + EK*Z2	kVA 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																									



4D121020B

ETB(H/X)D6V

ETB(H/X)D9W

ETV(H/X/Z)D6V

ETV(H/X/Z)D9W

* 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
 - 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	EPRA(14/16/18)DA*						
Indoor unit type		ETB(H/X)16DA*			ETV(H/X/Z)16S*DA*		
	Backup heater type	6V		9W	6V		9W
	Backup heater power supply	1~ 230V	3~ 230V	3~ 400V	1~ 230V	3~ 230V	3~ 400V
	Backup heater configuration	2 / 4 / 6 kW	6 kW	3 / 6 / 9 kW	2 / 4 / 6 kW	6 kW	3 / 6 / 9 kW
Normal kWh rate power supply							
Electrical meter type	1~	1	-	-	1	-	-
	3~ balanced	-	-	-	-	-	-
	3~ unbalanced	-	1	-	-	-	1
Preferential kWh rate power supply							
Electrical meter type	1~	2	1	1	2	-	-
	3~ balanced	-	-	-	-	-	-
	3~ unbalanced	-	1	1	-	-	-

4D126533

4 Combination table

4 - 1 Combination Table

4

ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-D9W

Kit availability for outdoor units

Reference	Description	EPRA14DA(V3/W1)	EPRA16DA(V3/W1)	EPRA18DA(V3/W1)
EKMST1	Mounting stand	o	o	o
EKMST2	Mounting stand	o	o	o

Kit availability for domestic hot water tanks

Reference	Description	*KHWP*			
KHWP	Domestic hot water tank with solar connection	500B	500PB	300B	300PB
*KSRPS4A	Solar pump station	o	o	o	o
EKEPRHLT3HX	Dedicated connection kit available.			o	o
EKEPRHLT5H	Heating only indoor unit	o	o		
EKEPRHLT5X	Only for reversible models	o	o		

Notes

- (1) PCB that provides additional output connections:
 - (a) Control external heat source (bivalent operation).
 - (b) Output remote ON/OFF signal space heating/cooling
 - (c) Remote alarm output
- (2) Additional relays to allow bivalent control in combination with an external room thermostat are field-supplied.
- (3) PCB to receive up to 4 digital inputs for power limitation
- (4) Data cable for connection with PC.
- (5) Only 1 remote sensor can be connected: indoor OR outdoor sensor.
- (6) The valve kit is mandatory if a heat pump convactor 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) Solar pump station
- (10) Dedicated connection kit available: EKEP*.
- (11) Multi-zoning wired controls

Remark

Other combinations than mentioned in this combination table are prohibited.

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4 Combination table

4 - 1 Combination Table

ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-D9W

Factory-mounted equipment for ETB(H/X)16DF*

Description	ETB(H/X)16DF*	
Heating only model ETBH	6V (8)	9W (8)
Reversible model ETBX	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	EPRA14DA(V3/W1)	EPRA16DA(V3/W1)	EPRA18DA(V3/W1)
ETBH16DF* Heating only	o	o	o
ETBX16DF* Reversible	o	o	o

Kit availability for indoor units

Reference	Description	ETB*16DF*	
ETBH*	Heating only indoor unit	6V	9W
ETBX*	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
EKPCAB4	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) (10) o	o
EKHWP500PB	Domestic hot water tank with solar connection	* (9) (10) o	o
EKHWP300B	Domestic hot water tank with solar connection	* (9) (10) o	o
EKHWP300PB	Domestic hot water tank with solar connection	* (9) (10) o	o
EKHYPART	Third-party tank connection kit for thermistor pocket	o	o
EKHYPART2	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 + Smart Grid applications	o	o
BRP069A62	LAN adapter for smartphone control	o	o
EKCC8-W	Universal centralised user interface	o	o
DCOM-LT/IO	DCOM gateway	o	o
DCOM-LT/MB	DCOM gateway	o	o
EKHBCONV	Conversion kit: heating only to reversible.	o	o
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	o	o
EKRTR1	Wireless room thermostat	o	o
EKRTERS	External sensor room thermostat	* (7) o	o
EKWUFHTA1V3	Multi-zoning base unit 230 V	* (11) o	o
EKWCTRD1V3	Digital thermostat 230 V	* (11) o	o
EKWCTRA1V3	Analogue thermostat 230 V	* (11) o	o
EKWCVATR1V3	Actuator 230 V	* (11) o	o

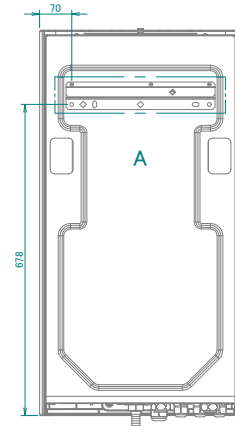
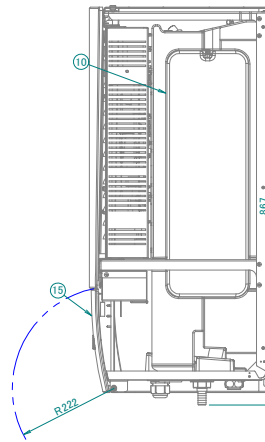
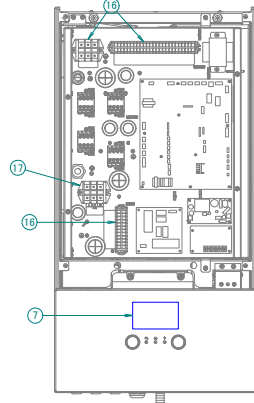
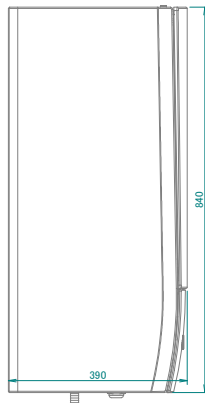
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5 Dimensional drawings

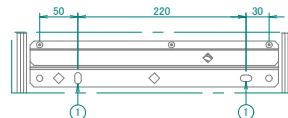
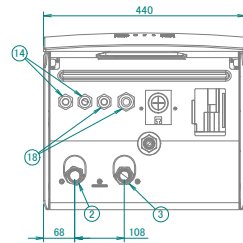
5 - 1 Dimensional Drawings

5

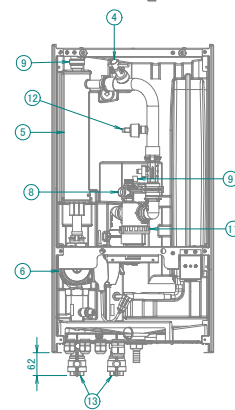
ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



- 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



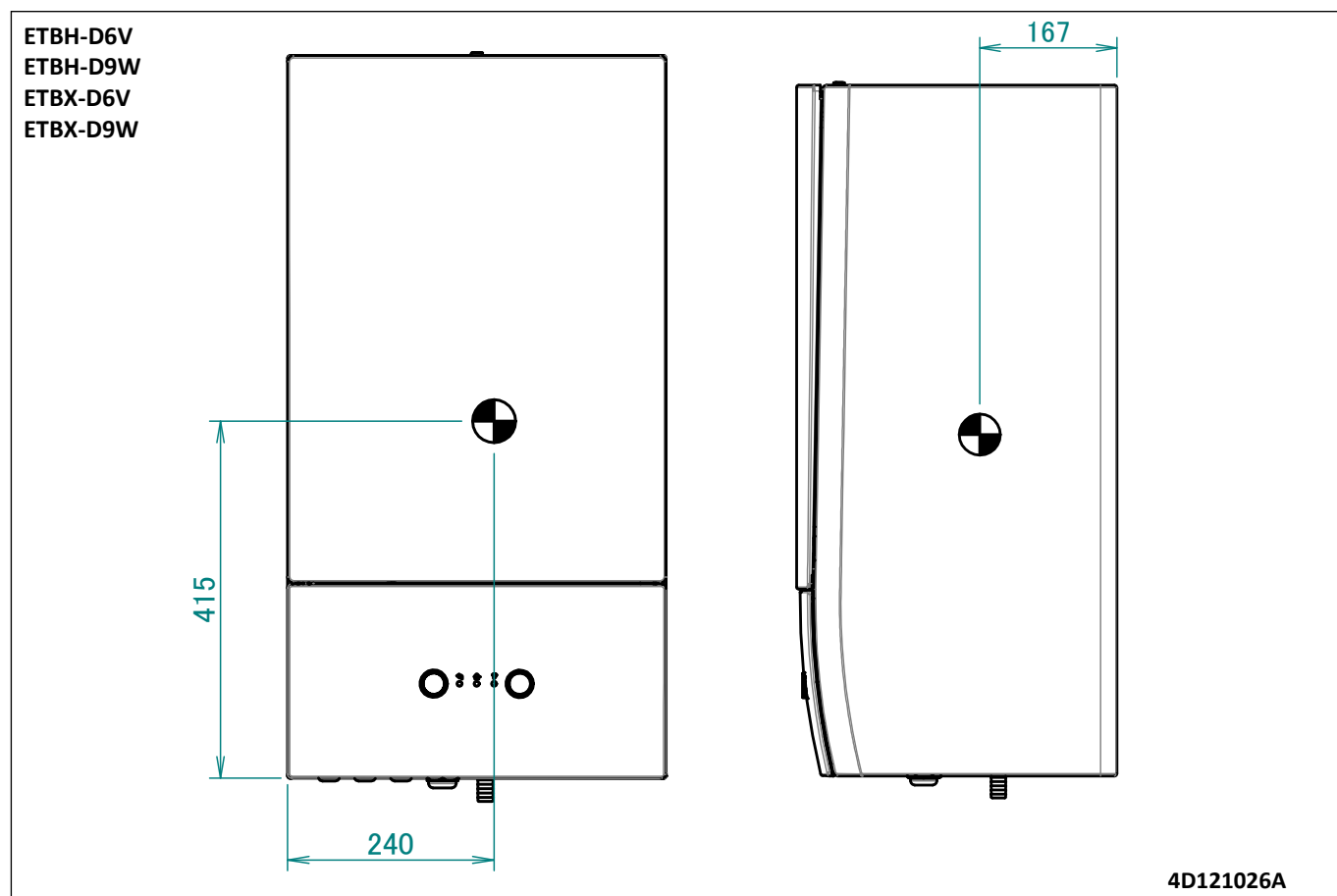
DETAIL A
WALL FIXATION



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6 Centre of gravity

6 - 1 Centre of Gravity



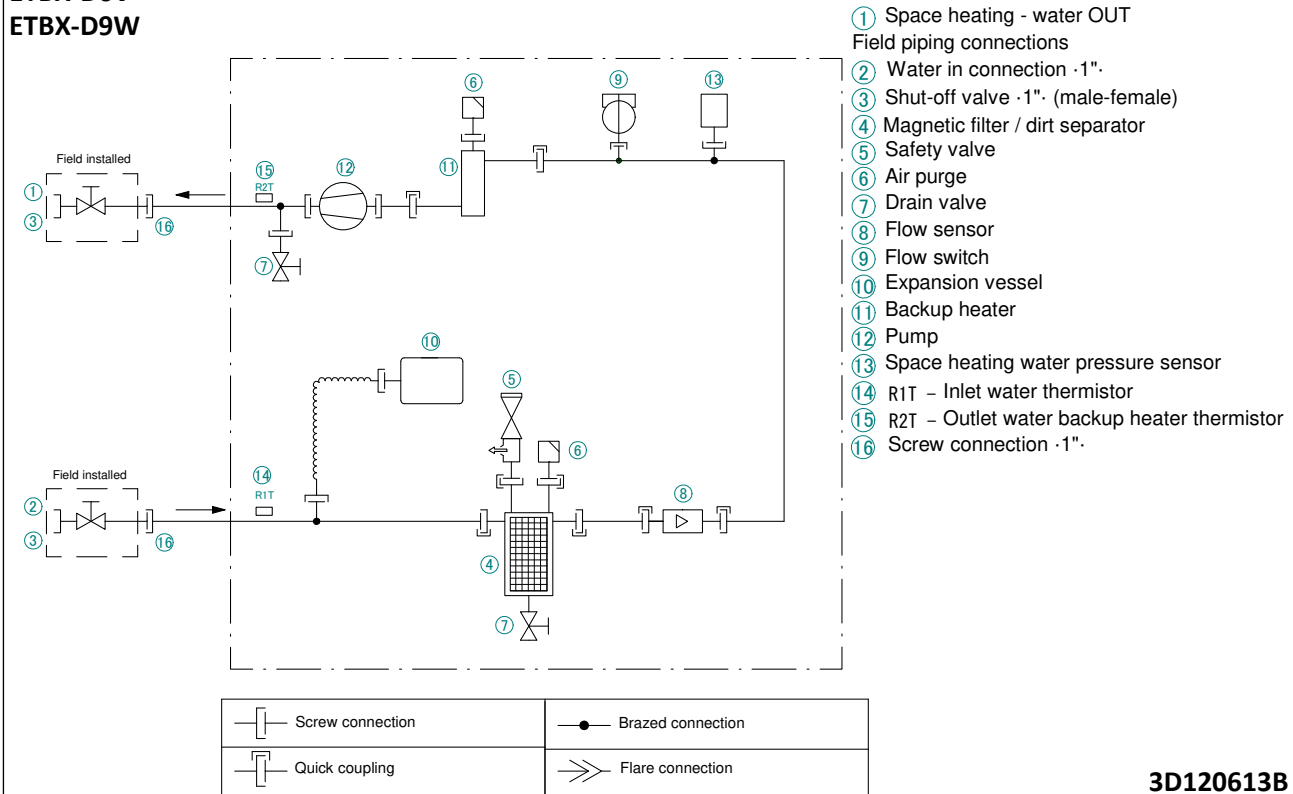
6

7 Piping diagrams

7 - 1 Piping Diagrams

7

ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



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8 Wiring diagrams

8 - 1 Notes & Legend

ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-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

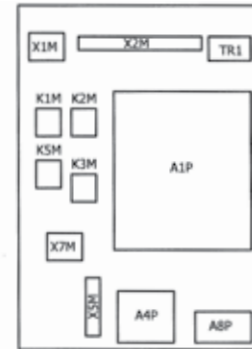
Option

Wiring depending on model

Not mounted in switch box

PCB

POSITION IN SWITCH BOX



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
☐ Safety thermostat

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

Translation can be found in the installation manual.

* : optional

: field supply

Part n°	Description		
A1P	Main terminal		
A2P	* On/OFF thermostat (PC=power circuit)		
A3P	* heat pump convactor		
A4P	* digital I/O PCB		
A8P	* demand PCB		
A9P	status indicator		
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	fuse T 0,5 A 250		
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)	* optocouples 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 connectoe		
X7M, X8M	BSH power supply terminal strip		
X*, X*A, J*	connector		
X*Y*, Y*			
X*M	terminal strip		

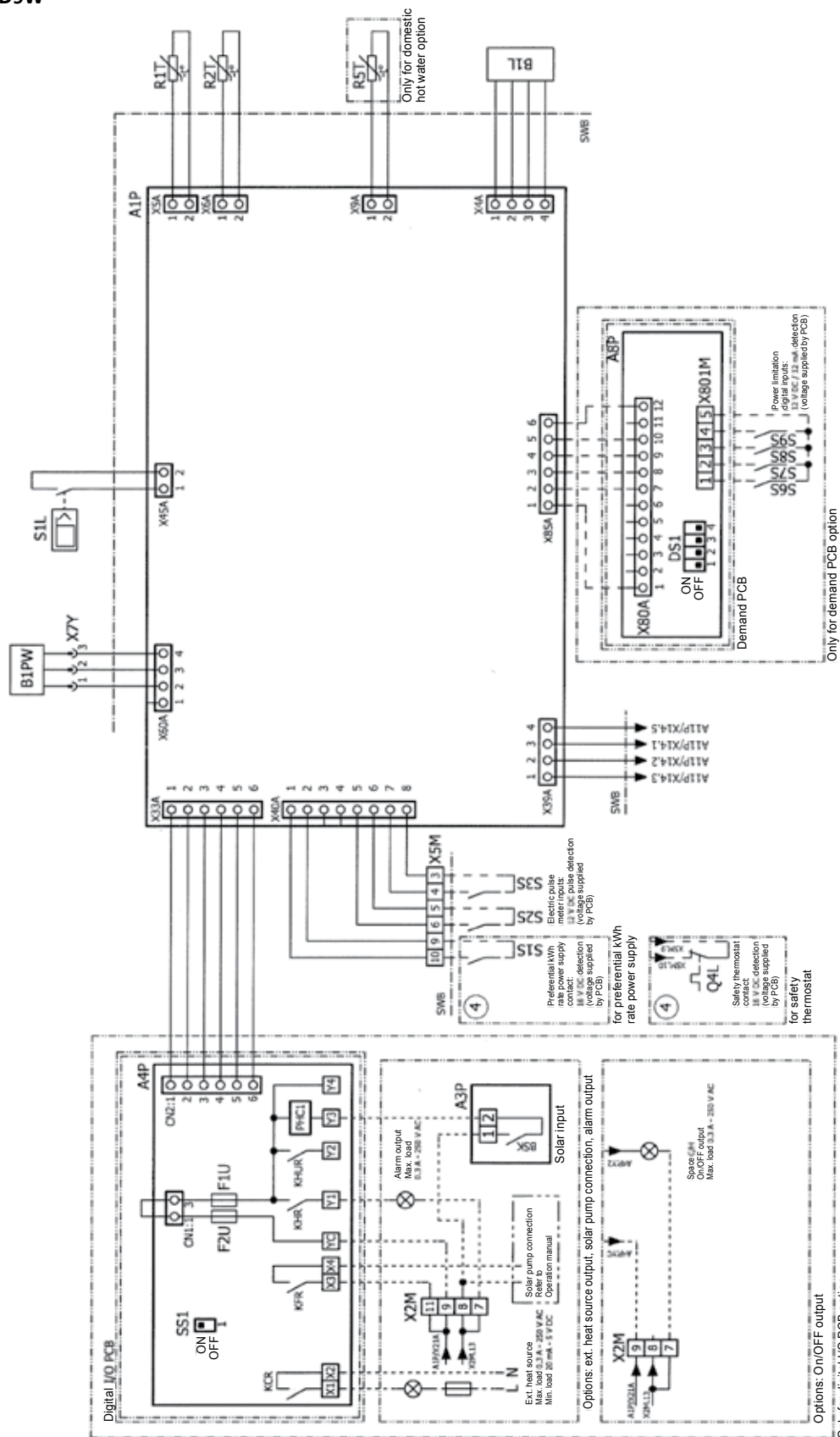
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8 Wiring diagrams

8 - 2 Control Circuit

8

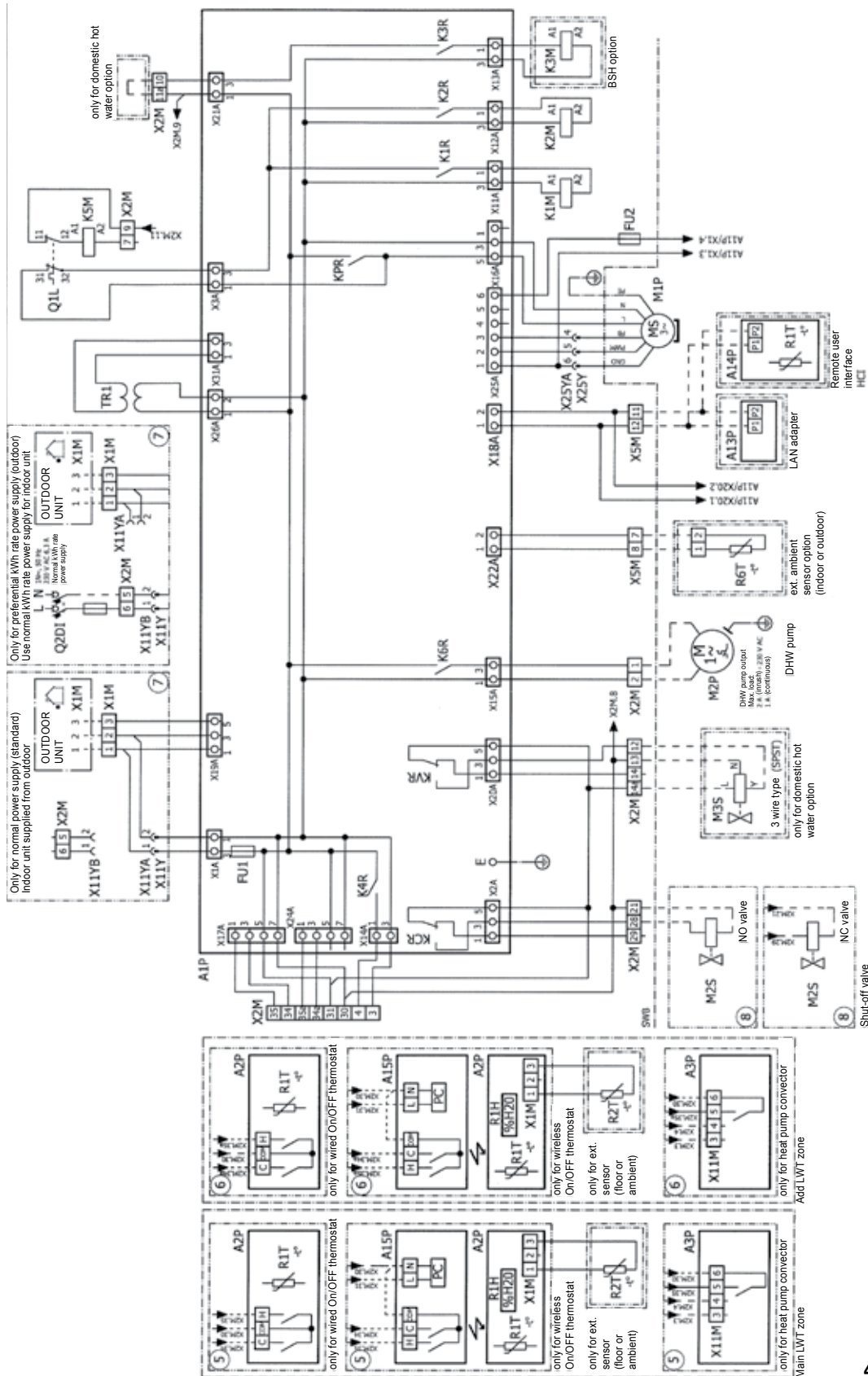
ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



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8 - 2 Control Circuit

ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



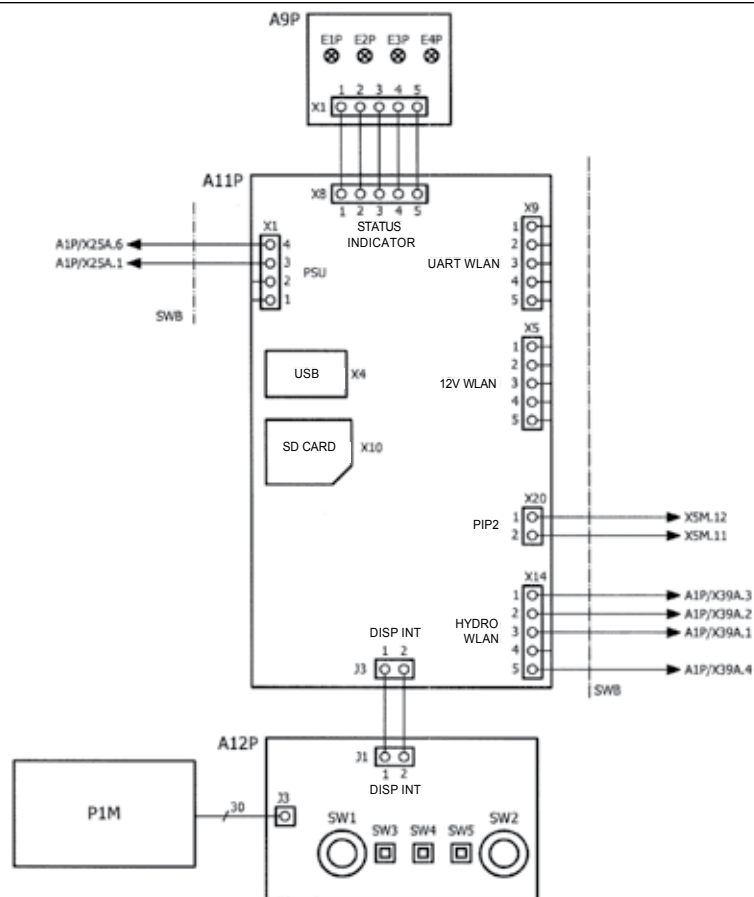
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8 Wiring diagrams

8 - 2 Control Circuit

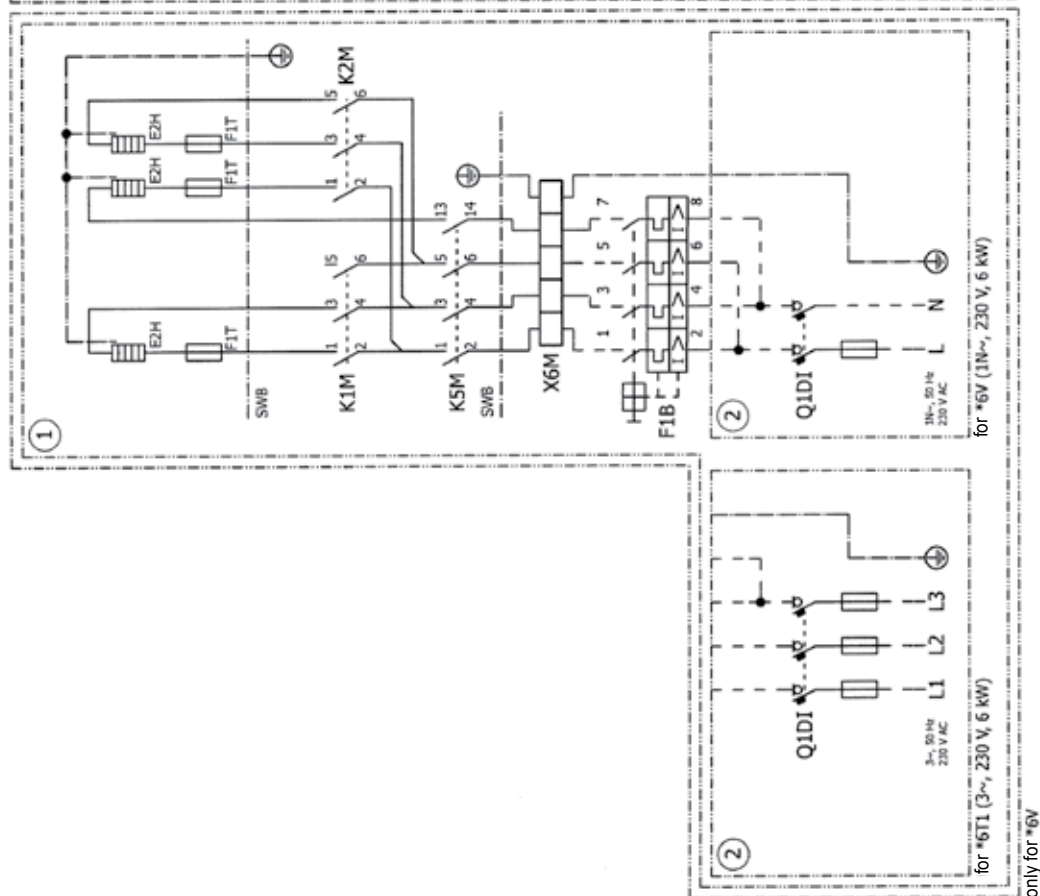
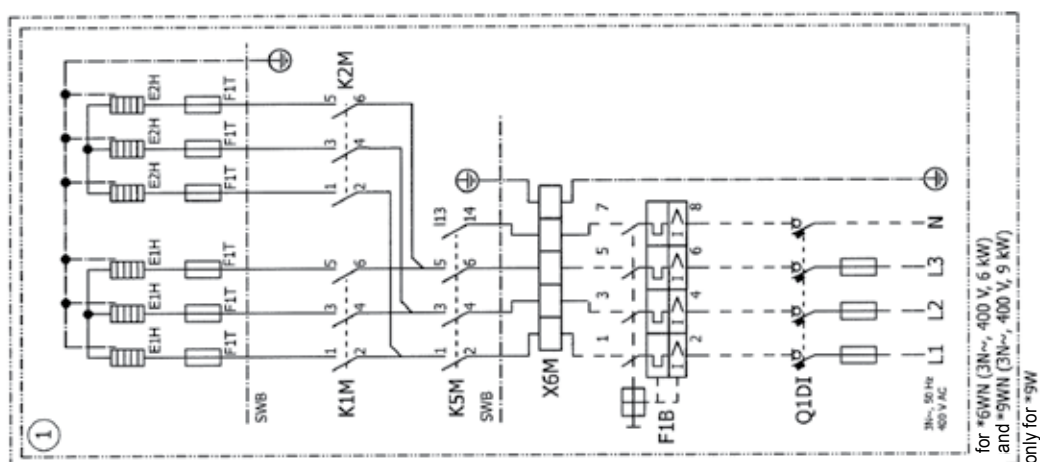
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ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



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8

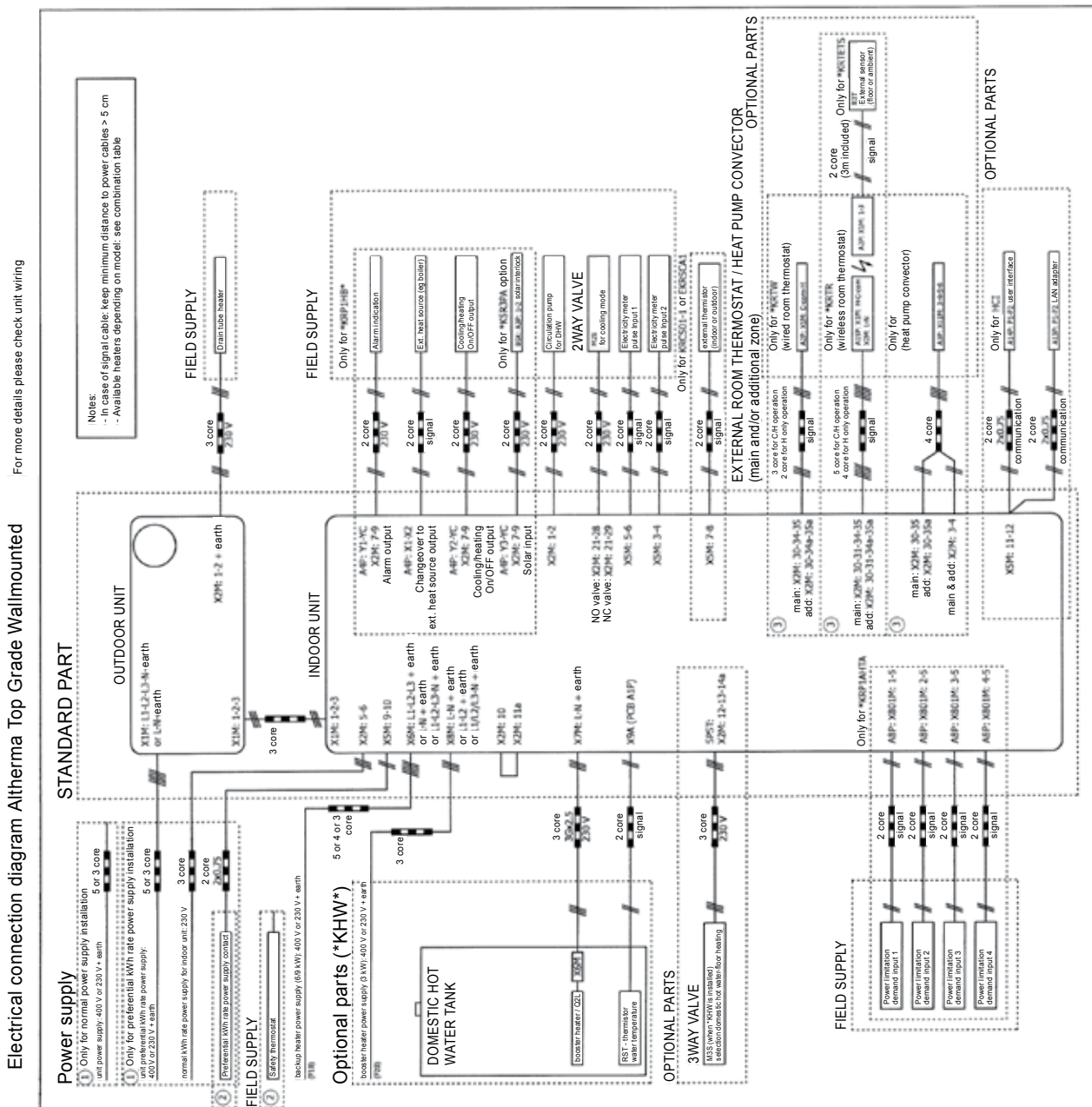


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9 - 1 External Connection Diagrams

9

ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W

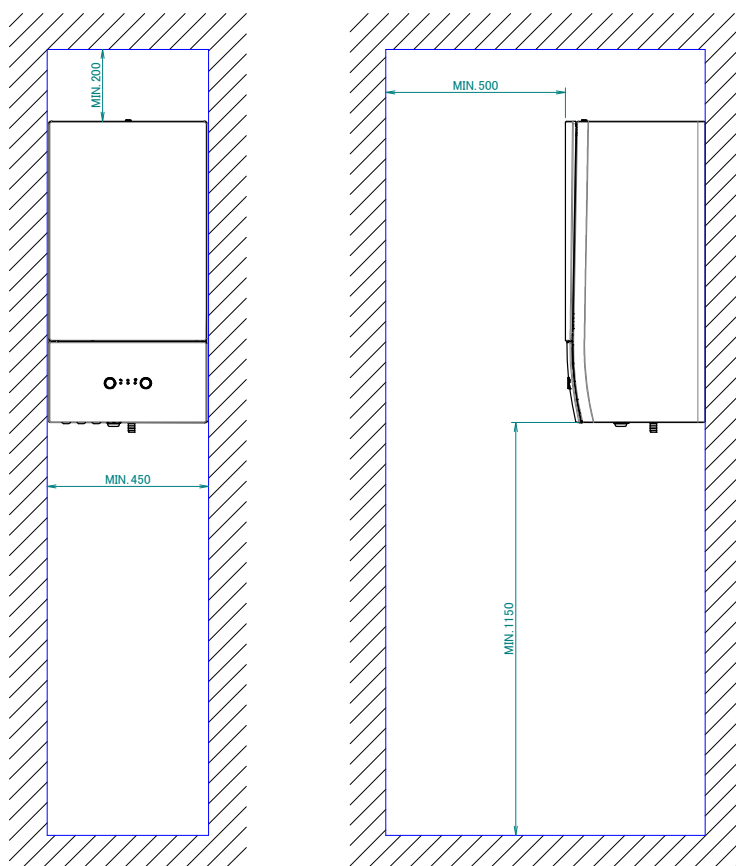


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10 Installation

10 - 1 Installation Method

ETBH-D6V
ETBH-D9W
ETBX-D6V
ETBX-D9W



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11 Operation range

11 - 1 Operation Range

ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-D9W

Domestic hot water heating mode

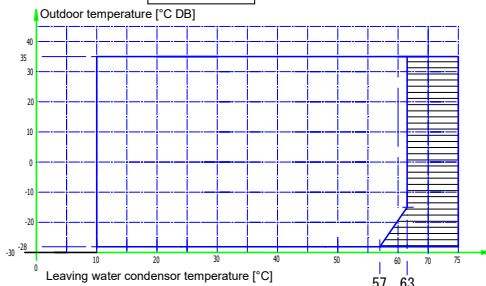
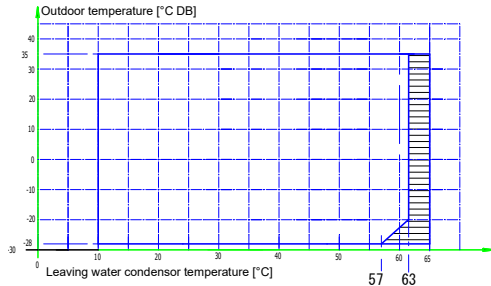
ETV*

EKHWP*

+ ETS*

EKHS*200*
EKHS*250*
EKHS*300*

+ Third-party with identical specifications as 'EKHS*200'



EKHS*150*
EKHS*180*

+

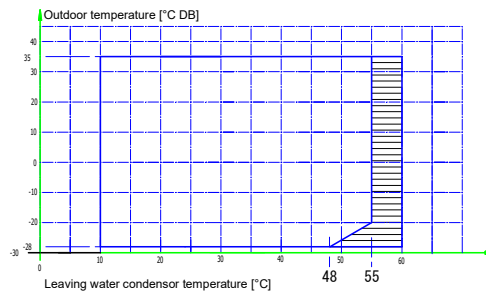
Third-party with identical specifications as 'EKHS*150'

Legend

Backup heater only operation (or booster heater, if part of the system)

Remark

1. In restricted power supply mode (EKHWP* only), the outdoor unit, booster heater and backup heater can only operate separately.
2. Third-party with identical specifications as 'EKHS*150'.
Coil surface > 1.05 m².
Tank thermostat: top part of heat pump coil. Small overlap.
3. Third-party with identical specifications as 'EKHS*200'.
Coil surface > 1.8 m².
Tank thermostat: top part of heat pump coil. Small overlap.

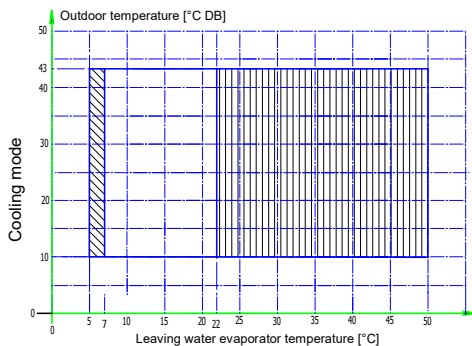
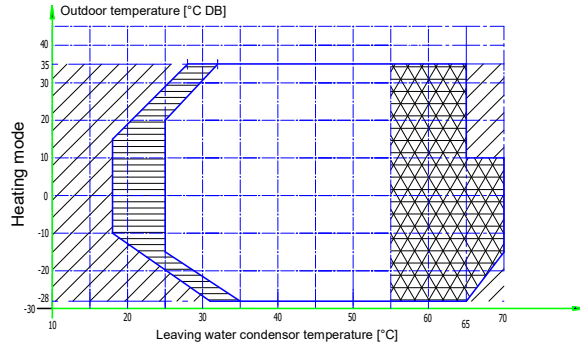
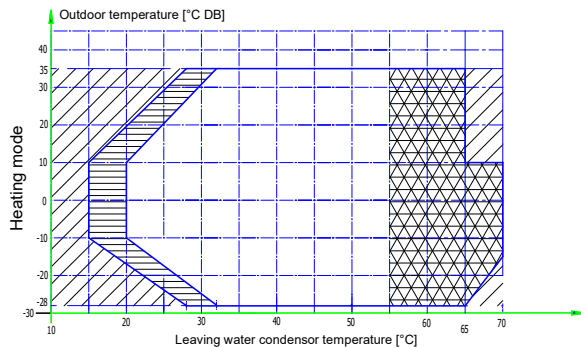


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ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-D9W

ETV*DA* + ETS*DA*

ETB*DA*



Legend

Backup heater only operation
No outdoor unit operation

Outdoor unit operation if setpoint ≥ -20°

Pull-down area

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

In case valve kit 'AFVALVE1' is part of the system, then the minimum setpoint is -7°C.

Remark

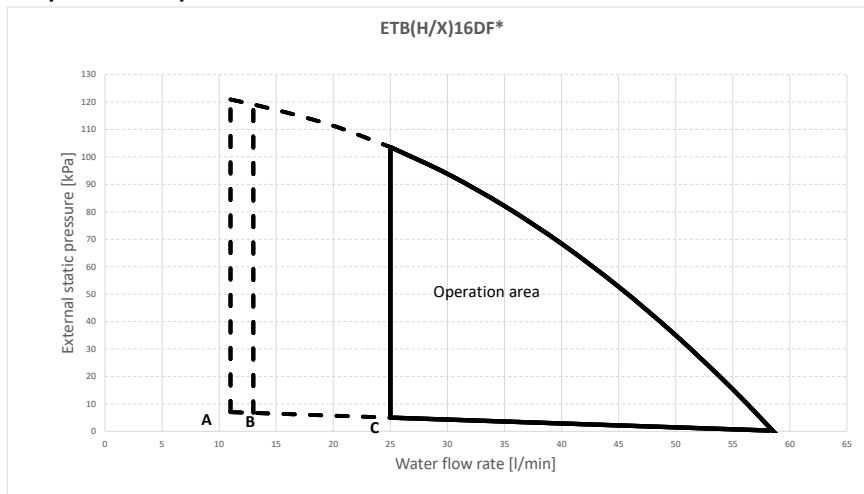
In restricted power supply mode, the outdoor unit, booster heater and backup heater can only operate separately.

3D125788A

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

ETBH-D6V / ETBH-D9W / ETBX-D6V / ETBX-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

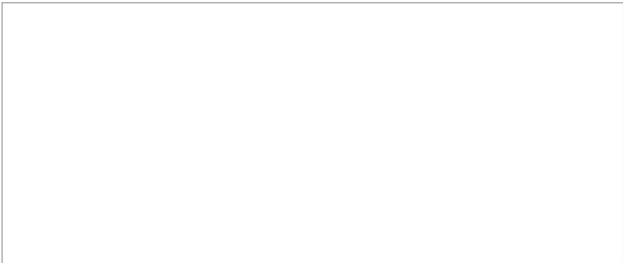
Operation area is extended to lower flow rates only in case the unit operates with heat pump only.
(Not in startup, no BUH operation, no defrost operation.)

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.

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12/2020



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