

Daikin Altherma mid temperature split Technical Data ETSH12E / ETSHB12E / ETSX12E / ETSXB12E



ETSH12P30EF
ETSH12P50EF
ETSHB12P30EF
ETSHB12P50EF
ETSX12P30EF
ETSX12P50EF
ETSXB12P30EF
ETSXB12P50EF

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ETSH12E / ETSHB12E / ETSX12E / ETSXB12E

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1 Features

1 - 1 ETSHB12E, ETSH12E

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

1

- > Integrated solar unit, offering top comfort in heating and hot water
- > Maintenance-free tank: no corrosion, anode, scale or lime deposits, and no loss of water through safety valve
- > Maximum use of renewable energy: uses heat pump technology for heating and solar support for space heating and domestic hot water production
- > Fresh water principle: hygienic water, with no need for thermal legionella disinfection
- > Quick configuration in 9 steps in a high resolution colour interface wizard



Fresh hot water



Solar ready



Daikin Residential Controller (optional)

1 Features

1 - 2 ETSX12E, ETSXB12E

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

- › Integrated solar unit, offering top comfort in heating, hot water and cooling
- › Maintenance-free tank: no corrosion, anode, scale or lime deposits, and no loss of water through safety valve
- › Maximum use of renewable energy: uses heat pump technology for heating and solar support for space heating and domestic hot water production
- › Fresh water principle: hygienic water, with no need for thermal legionella disinfection
- › Quick configuration in 9 steps in a high resolution colour interface wizard

1



Fresh hot water



Solar ready



Daikin Residential Controller (optional)

2 Specifications

Technical specifications				ETSH12P30E		ETSH12P50E		
Outdoor unit				EPRA08EAV3 / EPRA08EAW1 / EPRA10EAV3 / EPRA10EAW1 / EPRA12EAV3 / EPRA12EAW1				
Casing	Colour	Traffic white (RAL9016) / Traffic black (RAL9017)						
	Material	Impact resistant polypropylene						
Dimensions	Unit	Height	mm	1,892		1,910		
		Width	mm	594		792		
		Depth	mm	644		816		
	Packed unit	Height	mm	2,028		2,046		
		Width	mm		800			
		Depth	mm		900			
Weight	Unit	kg	75		98			
	Packed unit	kg	87		110			
Packing	Material	Plastic foil / Wood (pallet) / Corrugated board						
	Weight	kg	12					
Pump	Type	Grundfos UPM3L K 20-75 CHBL AZA 3 RT						
	Nr of speeds	PWM						
	IP class	IPX4D						
	Power input	W	75					
Water side Heat exchanger	Insulation material	EPP						
Tank	Water volume	l	294		477			
	Material	Polypropylen						
	Maximum water temperature	°C	85					
	Insulation	Material	HFC-free Polyurethane foam					
		Heat loss	kWh/24h	1.5 (1)		1.7 (1)		
Heat exchanger	Energy efficiency class	B						
	Quantity	2						
	Charging	Quantity	1					
		Tube material	Stainless steel (1.4404)					
	Face area	Face area	m ²	3.26		3.40		
		Internal coil volume	l	16.0		16.4		
		Operating pressure	bar	3.0				
	Domestic hot water	Face area	m ²	5.60		7.50		
		Internal coil volume	l	27.3		36.2		
		Operating pressure	bar	10.0				
	Quantity	1						
Tube material	Stainless steel (1.4404)							
General	Supplier/ Manufacturer details	Name or trademark	Daikin Europe N.V.					
General	Supplier/ Manufacturer details	Name and address	Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium					
Water circuit	Piping connections diameter	inch	G 1" (male)					
	Piping material	Brass (CW614N/CW617N)						
	Safety valve	bar	3.0					
	Manometer	Digital						
	Drain valve / fill valve	Yes						
	Shut off valve	Yes						
	flowswitch	Yes						
	Air purge valve	Yes						
	Pressure Heating Max.	bar	3					
	Air purge valve	Yes						
Water circuit - space heating side (main zone)	Drain valve / fill valve	Yes						
	Manometer	Yes						
	Piping connections diameter	inch	G 1 (MALE)					
	Safety valve	bar	3					
	Shut off valve	Yes						
Water circuit - Domestic hot water side	Piping material	Brass(CW617N)						
	Piping connections	Cold water in / Hot water out inch	G 1" (male)					
Sound power level	Nom.	dB(A)	47.3					
Sound pressure level	Nom.	dB(A)	38.6					

2 Specifications

Technical specifications				ETSH12P30E		ETSH12P50E	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)		
			Max.	°CDB	0 (2)		
	Water side		Min.	°C	0 (2)		
			Max.	°C	0 (2)		
	Indoor installation	Ambient	Min.	°CDB	5		
			Max.	°CDB	35		
	Cooling	Ambient	Min.	°CDB	0 (2)		
			Max.	°CDB	0 (2)		
		Water side		Min.	°C	0 (2)	
				Max.	°C	0 (2)	
Domestic hot water	Ambient	Min.	°CDB	0 (2)			
		Max.	°CDB	0 (2)			
	Water side		Min.	°C	0 (2)		
Max.			°C	0 (2)			
Control systems	Class of temperature control				II		
	Contribution to seasonal space heating % efficiency				2.0		
Installation place				Indoor			

Electrical specifications				ETSH12P30E		ETSH12P50E		
Power supply	Phase			1~				
	Frequency			Hz				
	Voltage			V				
	Voltage range	Min.	% range		10			
		Max.	% range		10			
IP class	IP			IPX4				

(1)Heatloss according to EN12897 |

(2)Refer to operation limits drawings

Technical specifications				ETSHB12P30E		ETSHB12P50E			
Outdoor unit				EPRA08EAV3 / EPRA08EAW1 / EPRA10EAV3 / EPRA10EAW1 / EPRA12EAV3 / EPRA12EAW1					
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)					
	Material			Impact resistant polypropylene					
Dimensions	Unit	Height	mm	1,892		1,910			
		Width	mm	594		792			
		Depth	mm	644		816			
	Packed unit	Height	mm	2,028		2,046			
		Width	mm	800					
		Depth	mm	900					
Weight	Unit	kg		76		100			
	Packed unit	kg		88		112			
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board					
	Weight			kg					
Pump	Type			Grundfos UPM3L K 20-75 CHBL AZA 3 RT					
	Nr of speeds			PWM					
	IP class			IPX4D					
	Power input			W					
Water side Heat exchanger	Insulation material			EPP					
Tank	Water volume			l		294			
	Material			Polypropylen					
	Maximum water temperature			°C					
	Insulation	Material			HFC-free Polyurethane foam				
		Heat loss			kWh/24h		1.5 (1)		
	Energy efficiency class			B					
Heat exchanger	Quantity			3					
	Charging	Quantity			1				
		Tube material			Stainless steel (1.4404)				
	Domestic hot water	Face area	m ²		3.26		3.40		
		Internal coil volume	l		16.0		16.4		
		Operating pressure	bar		3.0				
		Face area	m ²		5.60		7.50		
	Pressurised solar	Internal coil volume	l		27.3		36.2		
		Operating pressure	bar		10.0				
		Quantity			1				
		Tube material			Stainless steel (1.4404)				
	Heat exchanger	Pressurised solar	Face area	m ²		0.74		1.83	
			Internal coil volume	l		3.9		9.1	
		Pressurised solar	Operating pressure	bar		6.0			
Quantity					1				
Tube material			Stainless steel (1.4404)						

2 Specifications

2

Technical specifications				ETSHB12P30E	ETSHB12P50E
General	Supplier/	Name or trademark		Daikin Europe N.V.	
	Manu- facturer details	Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium	
Water circuit	Piping connections diameter	inch		G 1" (male)	
	Piping material			Brass (CW614N/CW617N)	
	Safety valve	bar		3.0	
	Manometer			Digital	
	Drain valve / fill valve			Yes	
	Shut off valve			Yes	
	flowswitch			Yes	
	Air purge valve			Yes	
Water circuit - space heating side (main zone)	Pressure Heating Max.	bar		3	
	Air purge valve			Yes	
	Drain valve / fill valve			Yes	
	Manometer			Yes	
Water circuit - Do- mestic hot water side	Piping connections diameter	inch		G 1 (MALE)	
	Safety valve	bar		3	
	Shut off valve			Yes	
	Piping material			Brass(CW617N)	
Piping connections	Pressurised solar heat exchanger	inch		G 1" (male)	
Sound power level	Nom.	dBA		47.3	
Sound pressure level	Nom.	dBA		38.6	
Operation range	Heating	Ambient	Min.	°CDB	0 (2)
			Max.	°CDB	0 (2)
		Water side	Min.	°C	0 (2)
			Max.	°C	0 (2)
	Indoor installation	Ambient	Min.	°CDB	5
			Max.	°CDB	35
	Cooling	Ambient	Min.	°CDB	0 (2)
			Max.	°CDB	0 (2)
		Water side	Min.	°C	0 (2)
			Max.	°C	0 (2)
	Domestic hot water	Ambient	Min.	°CDB	0 (2)
Operation range	Domestic hot water	Ambient	Max.	°CDB	0 (2)
		Water side	Min.	°C	0 (2)
			Max.	°C	0 (2)
Control systems	Class of temperature control			II	
	Contribution to seasonal space heating % efficiency			2.0	
Installation place				Indoor	

Electrical specifications				ETSHB12P30E	ETSHB12P50E
Power supply	Phase			1~	
	Frequency		Hz	50	
	Voltage		V	230	
	Voltage range	Min.	%	10	
		Max.	%	10	
IP class	IP			IPX4	

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

Technical specifications				ETSX12P30E	ETSX12P50E
Outdoor unit				EPRA08EAV3 / EPRA08EAW1 / EPRA10EAV3 / EPRA10EAW1 / EPRA12EAV3 / EPRA12EAW1	
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)	
	Material			Impact resistant polypropylene	
Dimensions	Unit	Height	mm	1,892	1,910
		Width	mm	594	792
		Depth	mm	644	816
	Packed unit	Height	mm	2,028	2,046
		Width	mm		800
		Depth	mm		900
Weight	Unit	kg		75	98
	Packed unit	kg		87	110
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board	
	Weight			kg	

2 Specifications

Technical specifications				ETSX12P30E	ETSX12P50E
Pump	Type	Grundfos UPM3L K 20-75 CHBL AZA 3 RT			
	Nr of speeds	PWM			
	IP class	IPX4D			
	Power input	W	75		
Water side Heat exchanger	Insulation material	EPP			
Tank	Water volume	l	294	477	
	Material	Polypropylen			
	Maximum water temperature	°C	85		
	Insulation Material	HFC-free Polyurethane foam			
	Heat loss	kWh/24h	1.5 (1)	1.7 (1)	
	Energy efficiency class	B			
Heat exchanger	Quantity	2			
	Charging Quantity	1			
	Tube material	Stainless steel (1.4404)			
	Face area	m ²	3.26	3.40	
	Internal coil volume	l	16.0	16.4	
	Operating pressure	bar	3.0		
	Domestic Face area	m ²	5.60	7.50	
	hot water Internal coil volume	l	27.3	36.2	
	Operating pressure	bar	10.0		
	Quantity	1			
Tube material	Stainless steel (1.4404)				
General	Supplier/ Manufacturer details	Name or trademark	Daikin Europe N.V.		
General	Supplier/ Manufacturer details	Name and address	Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium		
Water circuit	Piping connections diameter	inch	G 1" (male)		
	Piping material	Brass (CW614N/CW617N)			
	Safety valve	bar	3.0		
	Manometer	Digital			
	Drain valve / fill valve	Yes			
	Shut off valve	Yes			
	flowswitch	Yes			
	Air purge valve	Yes			
	Pressure Heating Max.	bar	3		
	Air purge valve	Yes			
Water circuit - space heating side (main zone)	Drain valve / fill valve	Yes			
	Manometer	Yes			
	Piping connections diameter	inch	G 1 (MALE)		
	Safety valve	bar	3		
	Shut off valve	Yes			
Water circuit - Domestic hot water side	Piping material	Brass(CW617N)			
	Piping Cold water in / Hot water out connections	inch	G 1" (male)		
Sound power level	Nom.	dB(A)	47.3		
Sound pressure level	Nom.	dB(A)	38.6		
Operation range	Heating	Ambient	Min.	°CDB	0 (2)
			Max.	°CDB	0 (2)
	Water side	Ambient	Min.	°C	0 (2)
			Max.	°C	0 (2)
	Indoor installation	Ambient	Min.	°CDB	5
			Max.	°CDB	35
	Cooling	Ambient	Min.	°CDB	0 (2)
			Max.	°CDB	0 (2)
	Water side	Ambient	Min.	°C	0 (2)
			Max.	°C	0 (2)
	Domestic hot water	Ambient	Min.	°CDB	0 (2)
			Max.	°CDB	0 (2)
	Water side	Ambient	Min.	°C	0 (2)
			Max.	°C	0 (2)
Control systems	Class of temperature control		II		
	Contribution to seasonal space heating efficiency		% 2.0		
Installation place	Indoor				

2 Specifications

2

Electrical specifications				ETSX12P30E		ETSX12P50E		
Power supply	Phase					1~		
	Frequency	Hz				50		
	Voltage	V				230		
	Voltage range	Min.	%				10	
		Max.	%				10	
IP class	IP					IPX4		

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

Technical specifications				ETSXB12P30E		ETSXB12P50E		
Outdoor unit				EPRA08EAV3 / EPRA08EAW1 / EPRA10EAV3 / EPRA10EAW1 / EPRA12EAV3 / EPRA12EAW1				
Casing	Colour			Traffic white (RAL9016) / Traffic black (RAL9017)				
	Material			Impact resistant polypropylene				
Dimensions	Unit	Height	mm	1,892		1,910		
		Width	mm	594		792		
		Depth	mm	644		816		
	Packed unit	Height	mm	2,028		2,046		
		Width	mm		800			
	Depth	mm		900				
Weight	Unit	kg	76		100			
	Packed unit	kg	88		112			
Packing	Material			Plastic foil / Wood (pallet) / Corrugated board				
	Weight	kg		12				
Pump	Type			Grundfos UPM3L K 20-75 CHBL AZA 3 RT				
	Nr of speeds			PWM				
	IP class			IPX4D				
	Power input	W		75				
Water side Heat exchanger	Insulation material			EPP				
Tank	Water volume	l	294		477			
	Material			Polypropylen				
	Maximum water temperature	°C		85				
	Insulation	Material			HFC-free Polyurethane foam			
		Heat loss	kWh/24h	1.5 (1)		1.7 (1)		
Energy efficiency class			B					
Heat exchanger	Quantity			3				
	Charging	Quantity			1			
		Tube material			Stainless steel (1.4404)			
	Domestic hot water	Face area	m ²	3.26		3.40		
		Internal coil volume	l	16.0		16.4		
		Operating pressure	bar		3.0			
	Pressurised solar	Face area	m ²	5.60		7.50		
		Internal coil volume	l	27.3		36.2		
		Operating pressure	bar		10.0			
		Quantity			1			
	Pressurised solar	Tube material			Stainless steel (1.4404)			
		Face area	m ²	0.74		1.83		
	Heat exchanger	Pressurised solar	Internal coil volume	l	3.9		9.1	
Operating pressure			bar		6.0			
Quantity				1				
Tube material				Stainless steel (1.4404)				
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.			
	Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium				
Water circuit	Piping connections diameter	inch		G 1" (male)				
	Piping material			Brass (CW614N/CW617N)				
	Safety valve	bar		3.0				
	Manometer			Digital				
	Drain valve / fill valve			Yes				
	Shut off valve			Yes				
	flowswitch			Yes				
	Air purge valve			Yes				
	Pressure Heating Max.	bar		3				
	Water circuit - space heating side (main zone)	Air purge valve			Yes			
Drain valve / fill valve				Yes				
Manometer				Yes				
Piping connections diameter		inch		G 1 (MALE)				
Safety valve		bar		3				
Shut off valve			Yes					

2 Specifications

Technical specifications				ETSXB12P30E	ETSXB12P50E	
Water circuit - Domestic hot water side	Piping material			Brass(CW617N)		
	Piping	Cold water in / Hot water out inch connections		G 1" (male)		
Piping connections	Pressurised solar heat exchanger	inch		G 1" (male)		
Sound power level	Nom.	dBA		47.3		
Sound pressure level	Nom.	dBA		38.6		
Operation range	Heating	Ambient	Min.	°CDB	0 (2)	
			Max.	°CDB	0 (2)	
		Water side	Min.	°C	0 (2)	
			Max.	°C	0 (2)	
	Indoor installation	Ambient	Min.	°CDB	5	
			Max.	°CDB	35	
	Cooling	Ambient	Min.	°CDB	0 (2)	
			Max.	°CDB	0 (2)	
		Water side	Min.	°C	0 (2)	
			Max.	°C	0 (2)	
	Domestic hot water	Ambient	Min.	°CDB	0 (2)	
			Max.	°CDB	0 (2)	
Operation range	Domestic hot water side	Ambient	Max.	°CDB	0 (2)	
		Water	Min.	°C	0 (2)	
		Water	Max.	°C	0 (2)	
Control systems	Class of temperature control			II		
	Contribution to seasonal space heating efficiency %			2.0		
Installation place				Indoor		
Electrical specifications				ETSXB12P30E	ETSXB12P50E	
Power supply	Phase			1~		
	Frequency			Hz		
	Voltage			V		
	Voltage range	Min.	%		10	
		Max.	%		10	
IP class	IP			IPX4		

(1)Heatloss according to EN12897]

(2)Refer to operation limits drawings

3 Electrical data

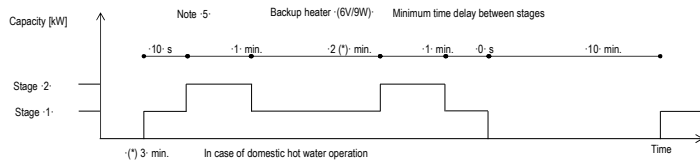
3 - 1 Electrical Data

3

ETSH12E
ETSHB12E
ETSX12E
ETSB12E

Electrical specifications of the backup heaters and booster heaters

Type	EKECBU*3V			EKECBU*6V				EKECBU*9W					
	1	1-2	1-2-3	2-4	2-6	2-4 (in case of emergency: 2-6)	3-6	3-9	3-6 (in case of emergency: 3-9)	3-9	3-6 (in case of emergency: 3-9)		
Capacity setting	[kW]												
Capacity stage -	-												
Capacity stage -1-	[kW]												
Capacity stage -2-	[kW]												
Minimum time delay between stages	-												
Power supply (1)	Phase	1~											
	Frequency	50											
	Voltage	230 +10%											
	Nominal running current	A	4.4	8.7	13.1	17.4	26.1	17.4	26.1	8.7	13	8.7	13
Current	Zmax (backup heater)	(2)	-										
		Ω	-										
		Complex	-										
	Minimum Ssc value	kVA	-										
			-				0.22		-				
			-				(3)		-				
Notes	(1)	The above-mentioned power supply of the hydrobox is for the backup heater only. The optional domestic hot water tank has a separate power supply.											
	(2)	In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax.											
	(3)	The equipment complies with EN/IEC 61000-3-12.											
	(4)	For the 3V model, the system variably chooses from 3 available capacity steps the adequate capacity for the given operating conditions.											
	EN/IEC 61000-3-11	European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤ 75 A.											
EN/IEC 61000-3-12	European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase.												
Zsys	System impedance												



3D136052

3 Electrical data

3 - 1 Electrical Data

ETSH12E
 ETSHB12E
 ETSX12E
 ETSXB12E

* 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		EPRA(08/10/12)EA*		
Indoor unit type		ETS*12*EF		
	Backup heater type (optional)	EKECBU*3V	EKECBU*6V	EKECBU*9W
	Backup heater power supply	1~ 230V	1~ 230V	3~ 400V
	Backup heater configuration	1/2/3 kW	2 / 4 / 6 kW	3 / 6 / 9 kW
Normal kWh rate power supply				
Electrical meter type	1~	1	1	-
	3~ balanced	-	-	-
	3~ unbalanced	-	-	1
Preferential kWh rate power supply				
Electrical meter type	1~	2	2	1
	3~ balanced	-	-	-
	3~ unbalanced	-	-	1

4D136059B

4 Combination table

4 - 1 Combination Table

4

ETSH12E / ETSHB12E / ETSX12E / ETSXB12E

Factory-mounted equipment for ·ETS(H/X)*12*E*· and ·ETS(H/X)*16*E*·

Description	ETS(H/X)*12P30E*	ETS(H/X)*12P50E*
Domestic hot water tank ·300l integrated·	o	-
Domestic hot water tank ·500l integrated·	-	o

Description	ETS(H/X)*16P30E*	ETS(H/X)*16P50E*
Domestic hot water tank ·300l integrated·	o	-
Domestic hot water tank ·500l integrated·	-	o

Outdoor combination table for ·ETS(H/X)*12*E*· and ·ETS(H/X)*16*E*·

		EPRA08EA(V3/W1)	EPRA10EA(V3/W1)	EPRA12EA(V3/W1)
ETSH12P(30/50)E*	Heating only indoor unit, Std	o	o	o
ETSHB12P(30/50)E*	Heating only indoor unit, bivalent	o	o	o
ETSH12P(30/50)E*	Reversible indoor unit, Std	o	o	o
ETSHB12P(30/50)E*	Reversible indoor unit, bivalent	o	o	o

		EPRA(14/16/18)DAW1*	EPRA(14/16/18)DAV3*
ETSH16P(30/50)E*	Heating only indoor unit, Std	o	o
ETSHB16P(30/50)E*	Heating only indoor unit, bivalent	o	o
ETSH16P(30/50)E*	Reversible indoor unit, Std	o	o
ETSHB16P(30/50)E*	Reversible indoor unit, bivalent	o	o

Kit availability for indoor units

Reference	Description	ETS(H/X)12P*E* ETS(H/X)16P*E*	ETS(H/X)B12P*E* ETS(H/X)B16P*E*
EKECBUAF3V	Inline backup heater 3kW *(16)	Mandatory	o *(17)
EKECBUAF6V	Inline backup heater 6kW *(16)	Mandatory	o *(17)
EKECBUAF9V	Inline backup heater 9kW *(16)	Mandatory	o *(17)
EKECBUCO1AF	Inline BUH connection kit TGS/TGL	Mandatory	o *(17)
EKRP1HBAA	Digital I/O PCB	*(1) (2)	-
EKRP1AHTA	Demand PCB	*(3)	o
BRC1HHDA*	HCI (Human Comfort Interface)	o	o
EKPCAB4	PC cable	*(4)	o
KRCS01-1	Remote indoor sensor	*(5)	o
EKRSCA1	Remote sensor for outdoor	*(5)	o
EKCC8-W	Universal centralised user interface	o	o
DCOM-LT/IO	DCOM gateway	-	-
DCOM-LT/MB	DCOM gateway	-	-
EKCC8-W	Cascade control	o	o
EKHVCONV4	Conversion kit: heating only to reversible.	-	-
FWXV10-15-20ATV3	Heat pump convector	*(6)	o
FWXT10-15-20ATV3	Heat pump convector	*(6)	o
FWXM10-15-20ATV3	Heat pump convector	*(6)	o
EKVKHPC	Heat pump convector valve kit	-	-
EKRTR1	Wired room thermostat	o	o
EKRTR1	Wireless room thermostat	o	o
EKRTE1	External sensor room thermostat	*(7)	o
EKWUFHTA1V3	Multi-zoning base unit 230 V	*(9)	-
EKWCTRD1V3	Digital thermostat 230 V	*(9)	-
EKWCTRAN1V3	Analogue thermostat 230 V	*(9)	-
EKWCVATR1V3	Actuator 230 V	*(9)	-
EKRELSG	Relay for Smart Grid	o	o
BRP069A71	WLAN module	*(10)	o
EKUHWG3D	·G3· kit	*(11)	-
AFVALVE1	Freeze protection valve	o	o
ESAE04A01*	Daikin Residential Controller	o	-
156021	dirt separator	o	o
EKECBIVCOAF	Biv Connector Kit	-	o
EKECDBC0AF	DB connector Kit	o	o

Reference	Description	ETS(H/X)*12P*E* ETS(H/X)*16P*E*
EKMIKPOAF	Mixing kit – PCB only	o
EKMIKPHAF	Mixing kit – PCB with hydraulics	o
EKMIKHMAF	Hydraulics – mixed pump group	*(12)
EKMIKHUAF	Hydraulics – unmixed pump group	*(12)
EKMIKBVAF	Balancing vessel	o
EKMIKDIAF	Distributor for balancing vessel	*(13)

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) EKRETS can only be used in combination with EKRT1.
- (8) The backup heater capacity depends on a user interface setting.
- (9) Multi-zoning wired controls
- (10) The WLAN cartridge is supplied in the accessory bag of the unit and is meant to be plugged into the SD card slot on the MMI-2. In case of bad signal reception, the WLAN cartridge can be removed and replaced by the WLAN module.
- (11) This kit is mandatory for the UK models.
- (12) Only possible in combination with ·EKMIKPOAF·
- (13) Only possible in combination with ·EKMIKBVAF· and ·EKMIKPHAF· or ·EKMIKHUAF·
- (14) Only possible in combination with ·HBKIT·
- (15) Only possible in combination with ·ETVZ·
- (16) Only 1 Backup heater can be connected on one unit: 3 or 6* or 9 kW (*No GT1-model applicable). EKECBUCO*AF is needed to connect the backup heater to the main unit
- (17) Mandatory for installations without a bivalent heat source (oil or gas)

Remark

Other combinations than mentioned in this combination table are prohibited.

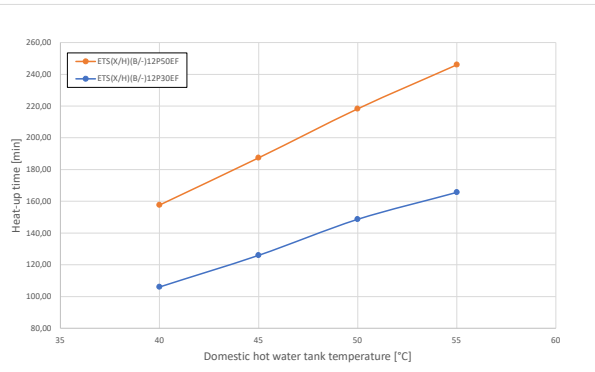
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5 Capacity tables

5 - 1 Domestic Hot Water performance

ETSH-E
 ETSHB-E
 ETSX-E
 ETSXB-E

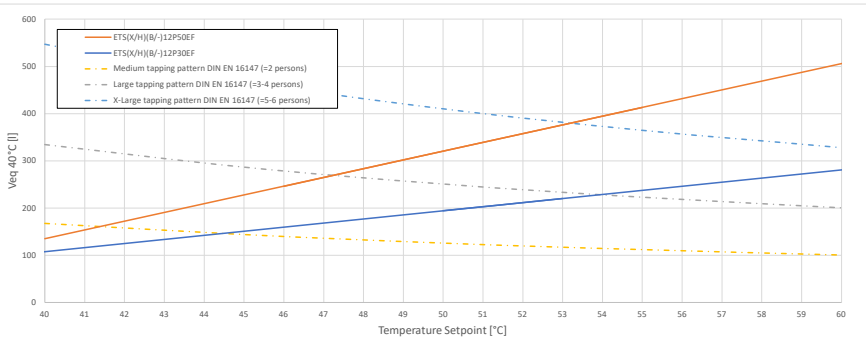
Heat-up times



Heat-up time domestic hot water tank until 45°C	
ETS(X/H)(B/-)12P30EF	-126 min.
ETS(X/H)(B/-)12P50EF	-187 min.

Selection guide for the domestic hot water tank volume

Ve_q 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

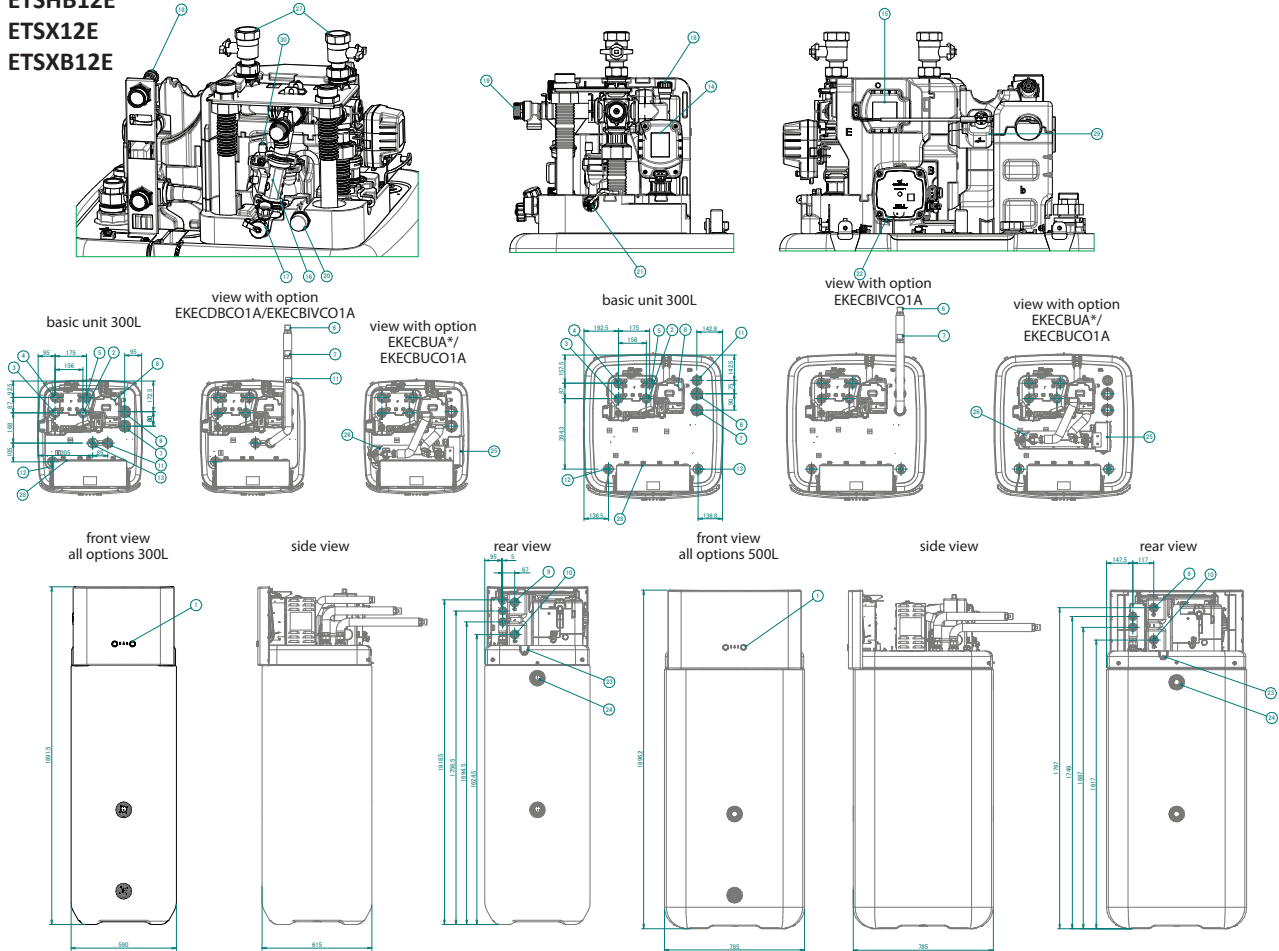


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6 Dimensional drawings

6 - 1 Dimensional Drawings

ETSH12E
ETSHB12E
ETSX12E
ETSB12E



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

1	User interface	16	Flow sensor
2	Space heating/cooling water in (screw connection, 1")	17	Fill and drain valve water circuit
3	Space heating/cooling water out (screw connection, 1")	18	Manual air purge
4	Domestic hot water: cold water in (screw connection, 1")	19	Safety valve
5	Domestic hot water: hot water out (screw connection, 1")	20	Expansions vessel connection (screw connection, 3/4")
6	BIV water: hot water in (screw connection, 1")	21	Space heating water pressure sensor
7	BIV water: cold water out (screw connection, 1")	22	Pump
8	Outdoor unit connection	23	Drain pan
9	Outdoor unit water in (screw connection, 1")	24	Spillover connection
10	Outdoor unit water out (screw connection, 1")	25	Switch box backup heater
11	Drain-back connection (screw connection, 1")	26	Backup heater
12	Tank temperature sensor	27	Shut-off valves
13	Level indicator	28	Main switch box
14	Tank valve	29	Flow switch
15	Bypass valve	30	Automatic air purge

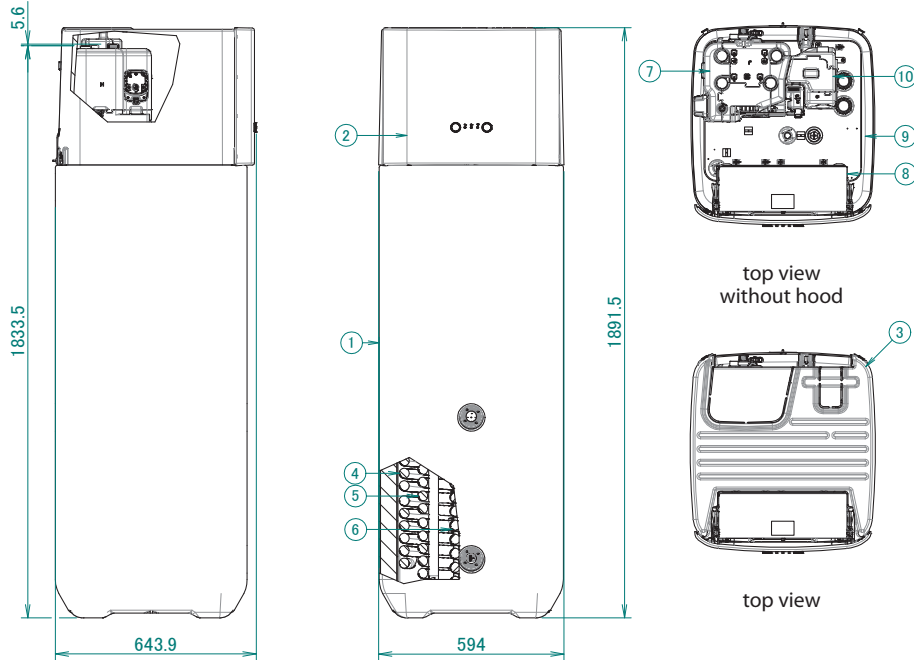
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6 Dimensional drawings

6 - 1 Dimensional Drawings

6

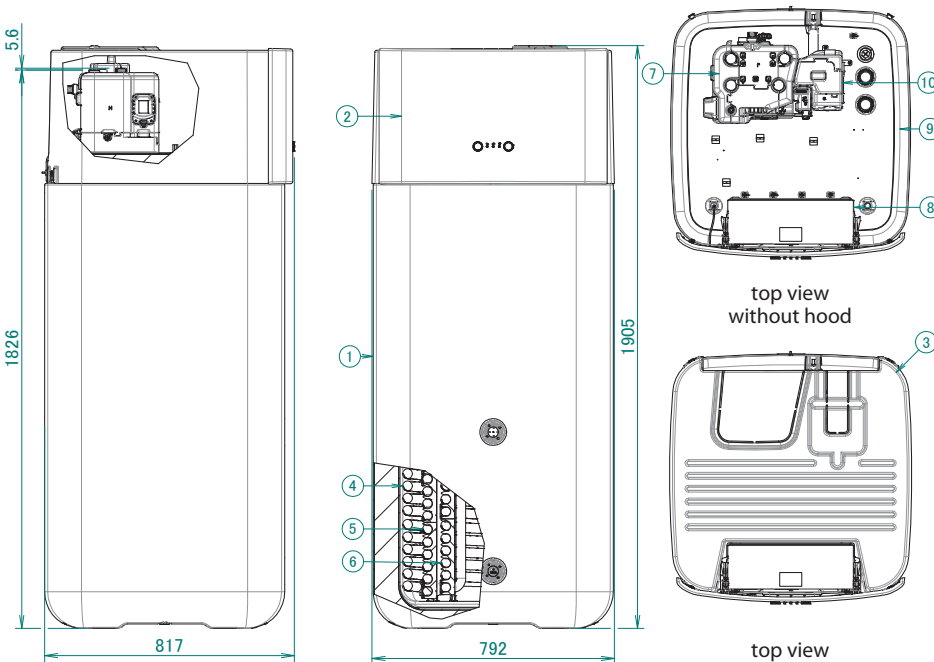
ETSH12P30E
 ETSHB12P30E
 ETSX12P30E
 ETSXB12P30E



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

3D136045

ETSH12P50E
 ETSHB12P50E
 ETSX12P50E
 ETSXB12P50E



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

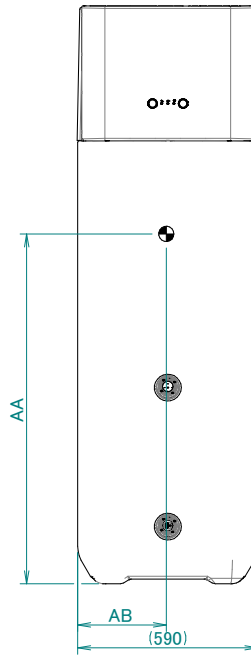
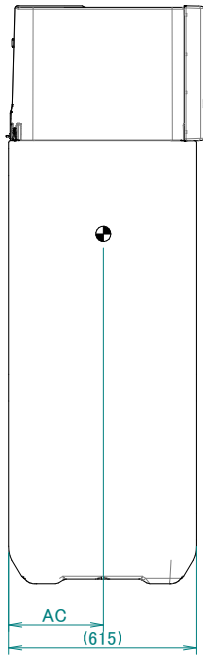
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7 Centre of gravity

7 - 1 Centre of Gravity

ETSH12P30E
 ETSHB12P30E
 ETSX12P30E
 ETSXB12P30E

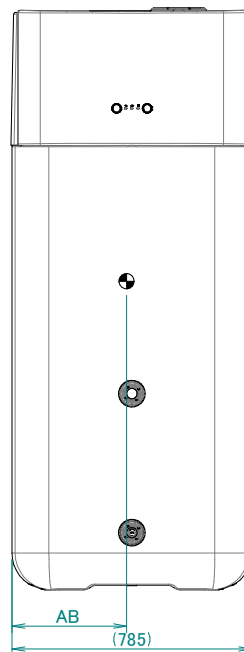
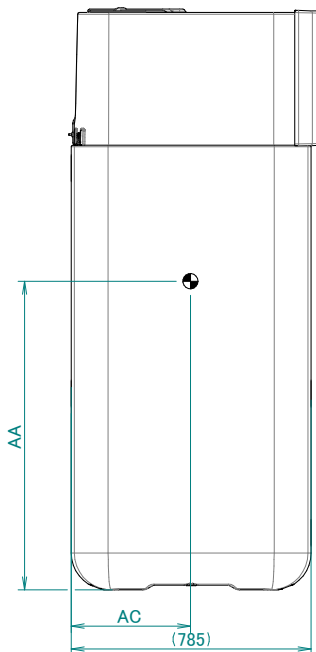
PART	REVISION	AA	AB	AC	JUDGE	CLASSIFY
1		1145	290	310	2	G1



3D136047

ETSH12P50E
 ETSHB12P50E
 ETSX12P50E
 ETSXB12P50E

PART	REVISION	AA	AB	AC	JUDGE	CLASSIFY
1		1010	375	390	2	G1



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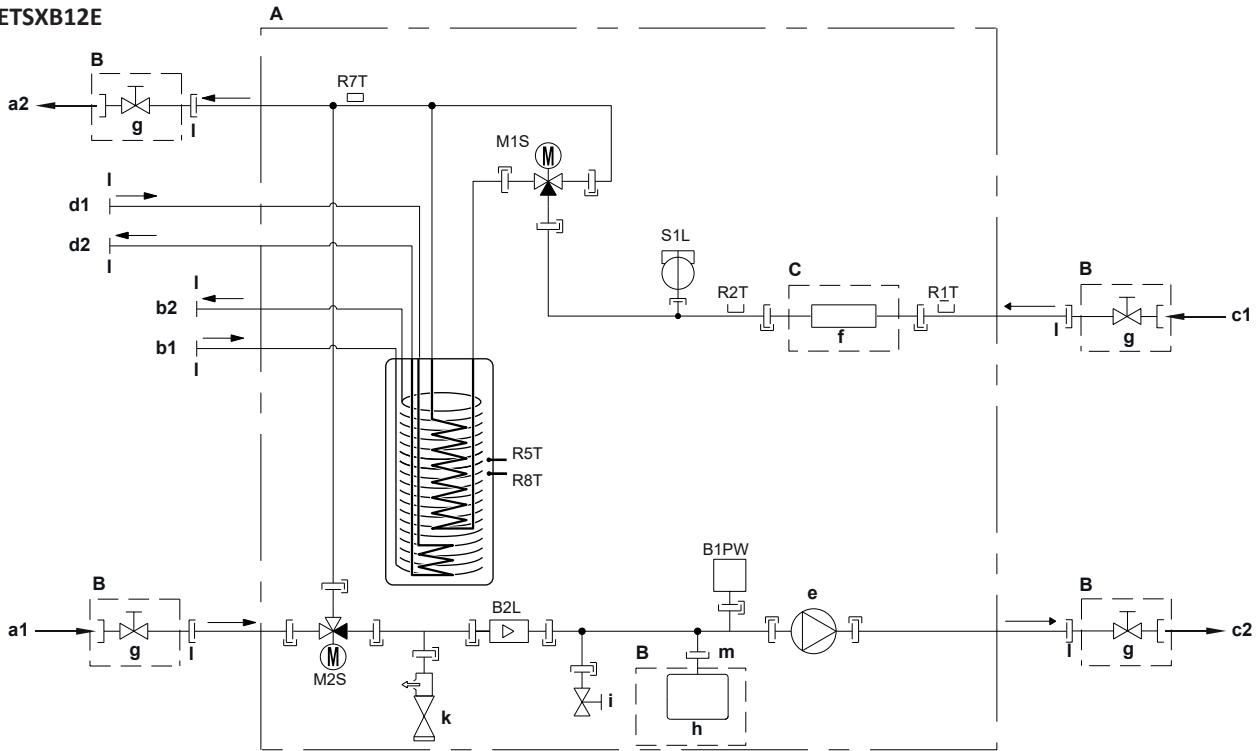
8 Piping diagrams

8 - 1 Piping Diagrams

8

ETSH12E
ETSHB12E
ETSX12E
ETSXB12E

Piping diagram: indoor unit



- A Indoor unit
- B Field installed
- C Optional

- a1 Space heating/cooling - Water IN (screw connection, 1")
- a2 Space heating/cooling - Water OUT (screw connection, 1")
- b1 DHW - Cold Water IN (screw connection, 1")
- b2 DHW - Hot water OUT (screw connection, 1")
- c1 Water IN from outdoor unit (screw connection, 1")
- c2 Water OUT to outdoor unit (screw connection, 1")
- d1 Water IN from bivalent heat source (screw connection, 1")
- d2 Water OUT to bivalent heat source (screw connection, 1")

- e Pump
- f Backup heater
- g Shut-off valve, female-female 1"
- h Expansion vessel
- i Drain valve
- k Safety valve
- l External thread 1"
- m External thread 3/4"
- B2L Flow sensor
- B1PW Space heating water pressure sensor
- M1S Tank valve
- M2S Bypass valve
- R1T Thermistor (water IN)
- R2T Thermistor (backup heater - water OUT)
- R5T, R8T Thermistor (tank)
- R7T Thermistor (tank - water OUT)
- S1L Flow switch

- Screw connection
- Flare connection
- Quick coupling
- Brazed connection

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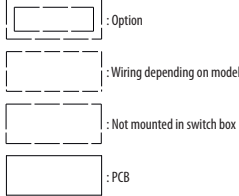
9 Wiring diagrams

9 - 1 Notes & Legend

ETSH12E / ETSHB12E / ETSX12E / ETSXB12E

NOTES to go through before starting the unit

- X1M : Main terminal
- X6M : BUH Power supply terminal
- X12M : Field wiring terminal for AC
- X15M : Field wiring terminal for DC
- X1M : Field wiring
- : Earth wiring
- **/12.2 : Field supply
- ① : Several wiring possibilities

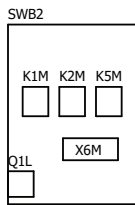
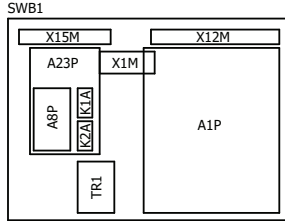


- Backup heater power supply
- 3V (1N~, 230V, 3kW)
 - 6V3 (1N~, 230V, 6kW)
 - 6WN/9WN (3N~, 400V, 6/9kW)

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

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

POSITION IN SWITCH BOX



LEGEND

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

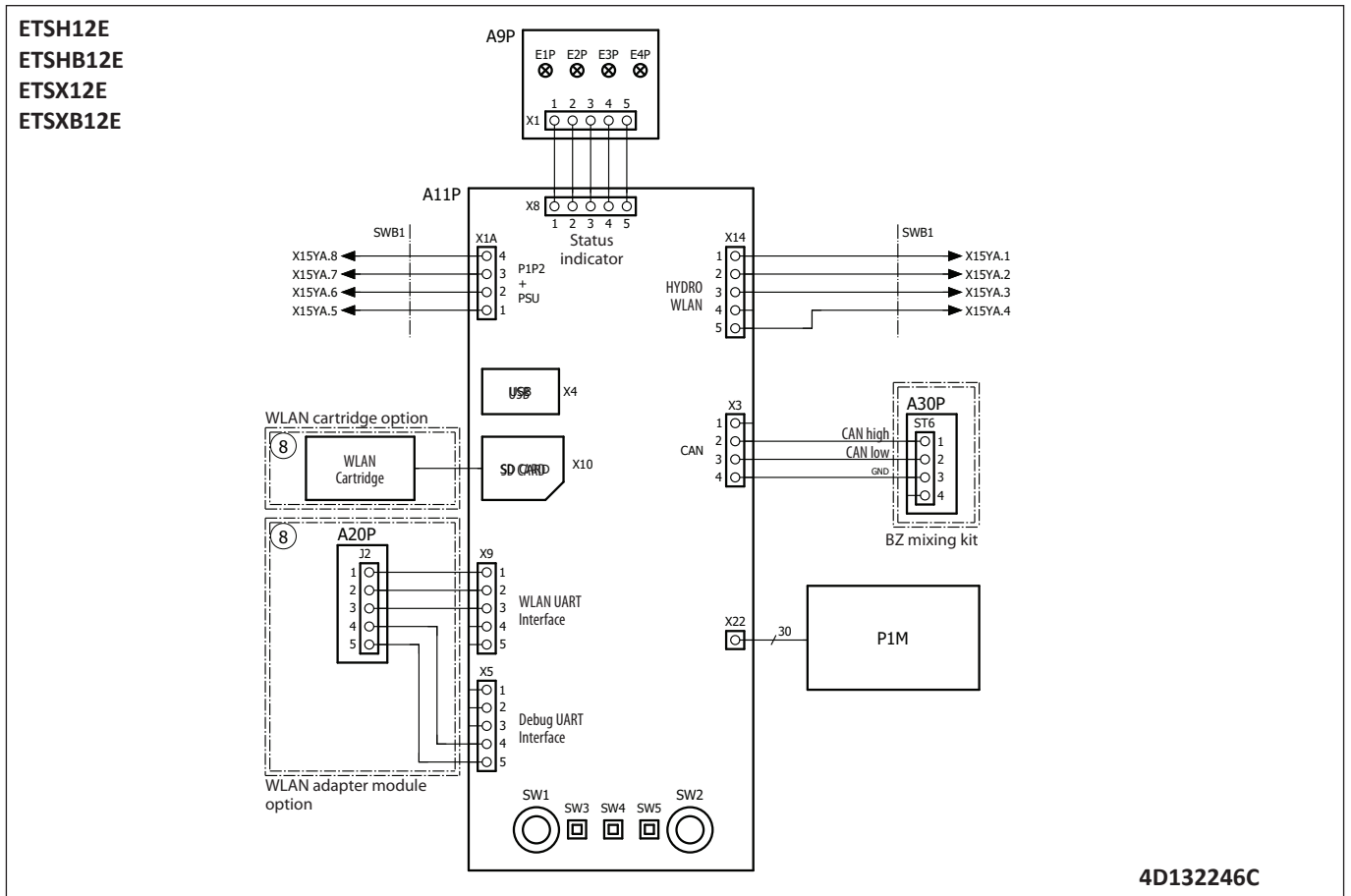
Part n°	Description
M4S	* shut-off valve
P1M	MMI display
PC (A15P)	* power circuit
Q1L	* thermal protector backup heater
Q4L	# safety thermostat
Q*DI	# earth leakage circuit breaker
R1H (A2P)	* humidity sensor
R1T (A1P)	outlet water heat exchanger thermistor
R1T (A2P)	* ambient sensor ON/OFF thermostat
R1T (A14P)	* ambient sensor user interface
R2T (A1P)	outlet backup heater thermistor
R2T (A2P)	* external sensor (floor or ambient)
R5T, R8T	domestic hot water thermistor
R6T	* external indoor or outdoor ambient thermistor
R7T	mixed leaving water thermistor
S1L	flow switch
S1S	# preferential kWh rate PS contact
S2S	# electrical meter pulse input 1
S3S	# electrical meter pulse input 2
S4S	# smart grid feed-in contact
S6S-S9S	* digital power limitation inputs
S10S-S11S	# low voltage smartgrid contact
S12S	# gas meter input
S13S	# solar input
SW1~2 (A11P)	turn buttons
SW3~5 (A11P)	push button
TR1	power supply transformer
X*, X*A, X*H*, X*Y	connector
X*M	terminal strip

*: optional #: field supply

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9 Wiring diagrams

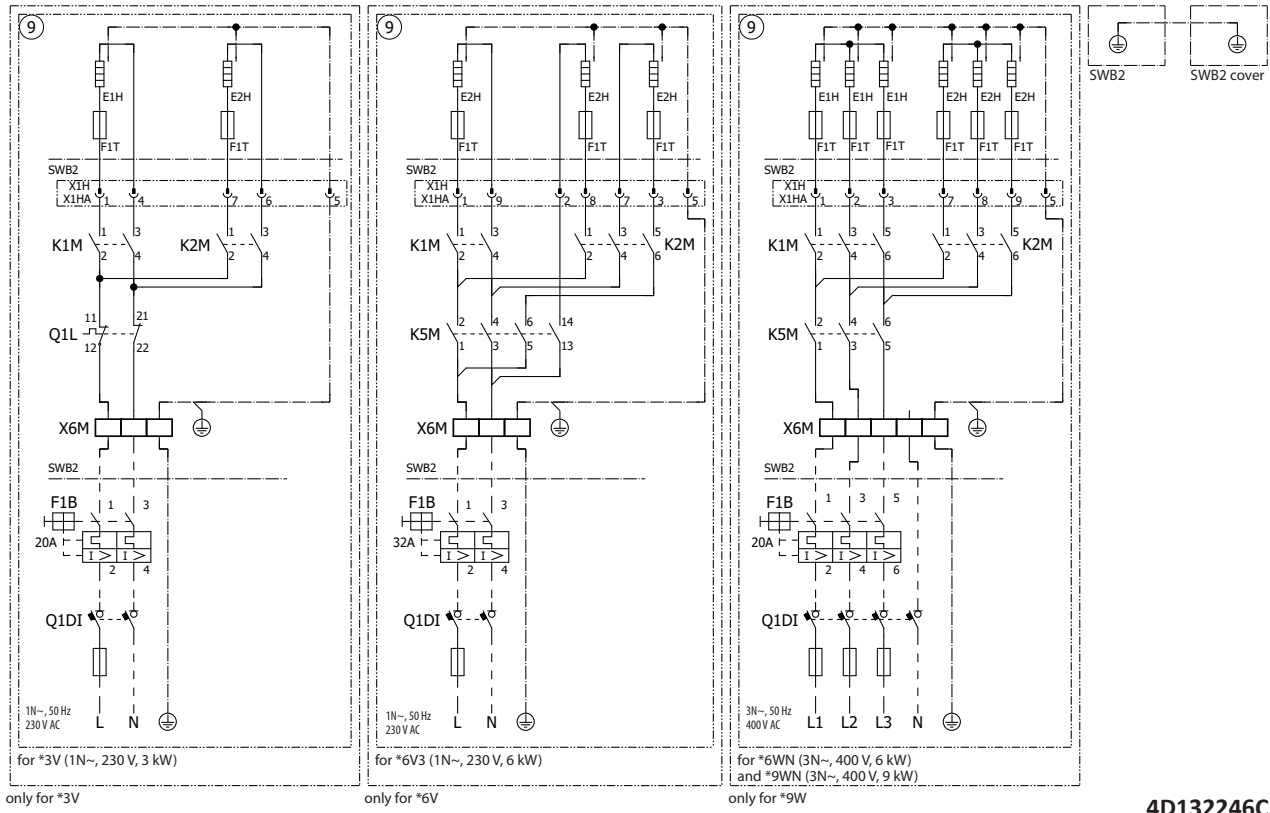
9 - 2 Control Circuit



9 Wiring diagrams

9 - 3 Power Supply, Back-up Heater

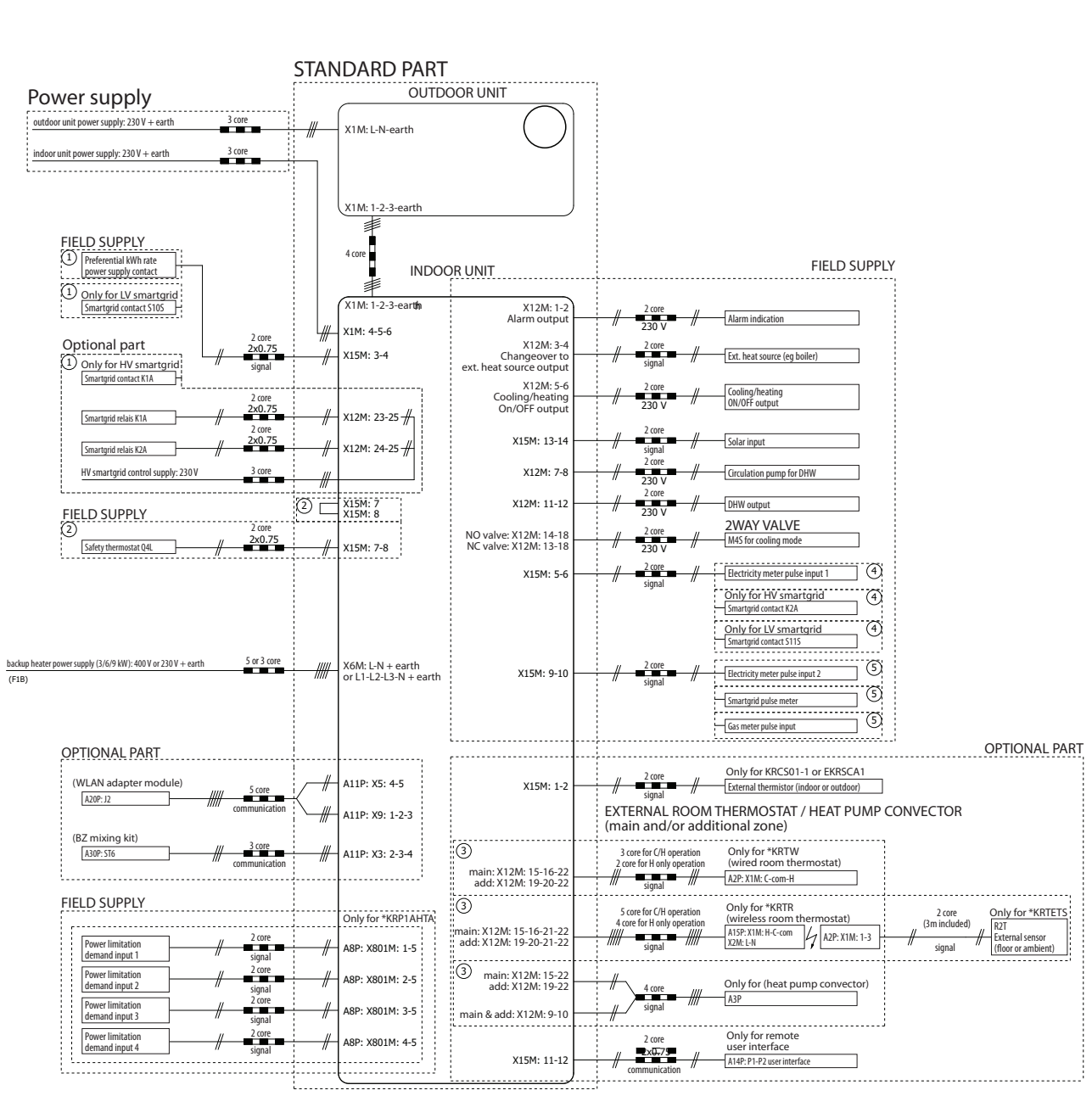
ETSH12E / ETSHB12E / ETSX12E / ETSXB12E



10 External connection diagrams

10 - 1 External Connection Diagrams

ETSH12E
ETSHB12E
ETSX12E
ETSXB12E



NOTE

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

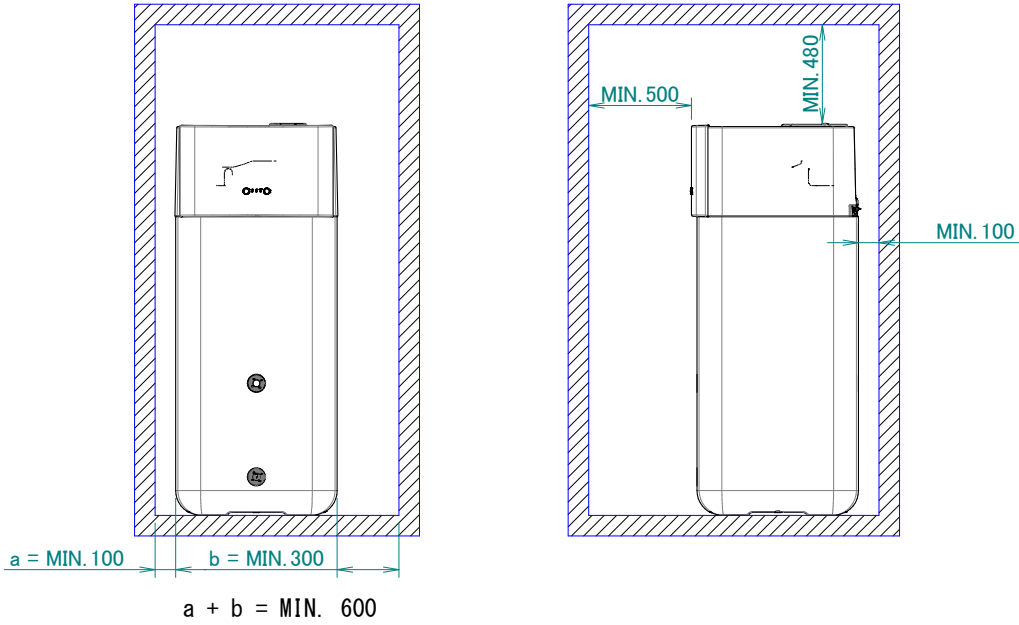
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11 Installation

11 - 1 Installation Method

11

ETSH12E
ETSHB12E
ETSX12E
ETAXB12E

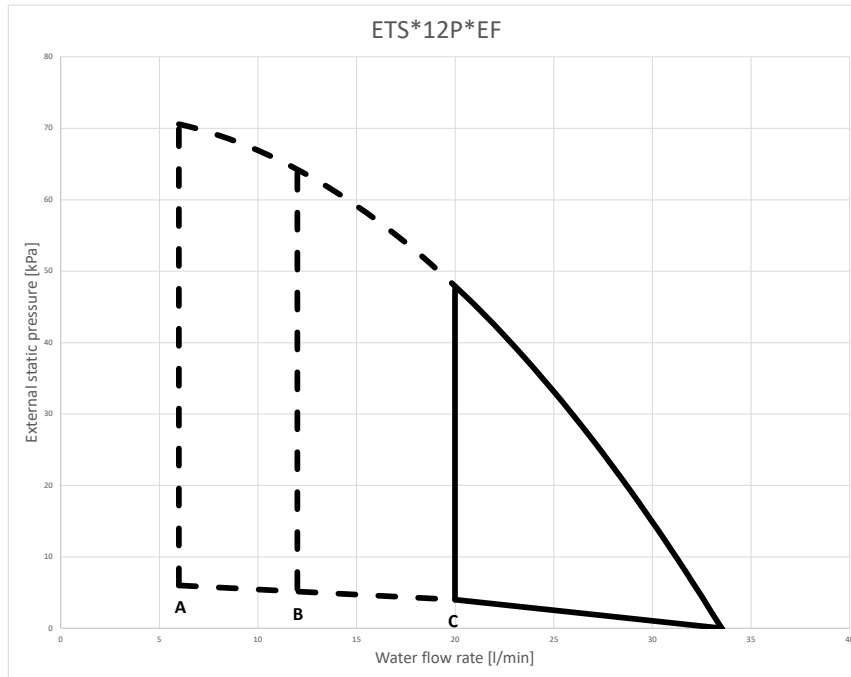


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12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

ETSH12E
 ETSHB12E
 ETSX12E
 ETSXB12E



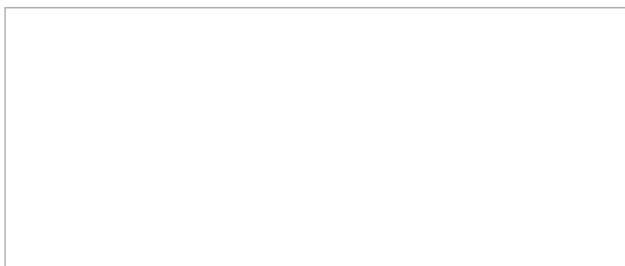
- A Minimum water flow rate during normal operation
- B Minimum water flow rate during backup heater operation
- C Minimum water flow rate during defrost operation

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