Daikin Altherma low temperature split Technical data book

EHVZ-E6V / EHVZ-E9W

EHVZ04S18EA6V
EHVZ08S18EA6V
EHVZ08S23EA6V
EHVZ08S18EA9W
EHVZ08S23EA9W

EEDEN20

Table of contents

EHVZ-E6V/EHVZ-E9W

1 Features

1 - 1 EHVZ-E6V, EHVZ-E9W

Floor standing unit integrated with different temperature zones management

1

- A combined stainless steel domestic hot water tank of 180 or 230L and heat pump for easy installation
- W-LAN Adapter connection
- PCB board and hydraulic components are located in the front for easy access
- Small installation footprint, similar to other household appliances
- Bi-zone allows temperature monitoring for 2 zones. Connect underfloor heating to radiators to optimise efficiency

Daikin Residential Controller

Online controller

2 Specifications

1 - 1 EHVZ-E6V, EHVZ-E9W

Technical specifications				EHVZ04S18E6V	EHVZ08S18E6V	EHVZ08S23E6V
Heater capacity	Step 1		kW	2		
	Step 2		kW	2 or 4		
Power input	Nom.		kW	0.14		
Efficiency	Domestic hot water	Net calorific value	%	118		135
Casing	Colour			White + Black		
	Material			Precoated sheet metal		
Dimensions	Unit	Height	mm	1,650		1,850
		Width	mm	595		
		Depth	mm	625		
	Packed unit	Height	mm	1,820		2,020
		Width	mm	720		
		Depth	mm	740		
Weight	Unit		kg	125		133
	Packed unit		kg	140		148
Packing	Material			Wood / Carton / PE wrapping foil / Metal		
	Weight		kg	16		
PED	Category			Art4.3 / See note 9		
	Most critical part	Name		Plate heat exchanger		
		Ps*V	Bar*l	37.72		
Refrigerant side heat exchanger	Type			Plate heat exchanger		
	Quantity			1		
	Plates	Quantity		42		
Pump Additional Zone	Nr of speeds			PWM		
	Power input		W	52		
	Type			Grundfos UPM 3		
Pump Main Zone	Nr of speeds			PWM		
	Power input		W	52		
	Type			Grundfos UPM 3		
Water side Heat exchanger	Type			Plate heat exchanger		
	Quantity			1		
	Plates	Quantity		42		
	Water volume		l	0.95		
	Water flow rate	Min.	l/min	12.0 (1)		
Expansion vessel	Volume		l	10		
	Max. water pressure		bar	3		
	Pre pressure		bar	1		
Water filter	Material			Stainless steel / Plastic		
Water Filter Additional Zone	Diameter perforations		mm	0.8		
	Material			Plastic / Stainless steel		
Water filter Main Zone	Diameter perforations		mm	1.0		
	Material			Copper - brass - stainless steel		
Tank	Name			Stainless steel domestic hot water tank 180 l		Stainless steel domestic hot water tank 230 L
	Water volume		l	180		230
	Material			Stainless steel (EN 1.4521)		
	Maximum water temperature		°C	70		
	Maximum water pressure		bar	10		
	Insulation	Material		Polyurethane foam		
		Heat loss	kWh/24h	1.2 (2)		1.4 (2)
	Corrosion protection			Pickling		
	Energy efficiency class			B		
	Standing heat loss		W	50		58
	Storage volume		l	181		220
General	Supplier/ Manufacturer details	Name or trademark		Daikin Europe N.V.		
		Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium		
3-way valve	Coefficient of flow (kV)	Space heating	m^3/h	8		
		Domestic hot water tank	m^3/h	10		
3-way valve mixing	Coefficient of flow (kV)	Bypass	m^3/h	13		
		Main zone only	m^3/h	8		

2 Specifications

1 - 1 EHVZ-E6V, EHVZ-E9W

Technical specifications					EHVZ04S18E6V	EHVZ08S18E6V	EHVZ08S23E6V
Water circuit	Piping connections diameter			inch	G 1" (female)		
	Piping material				Cu		
	Internal piping diameter			inch	1"		
	Piping			inch	1"		
	Safety valve			bar	3		
	Manometer				Digital		
	Drain valve / fill valve				No		
	Shut off valve				Yes		
	Air purge valve				Yes		
	Total water volume			l	4.5 (3)		
	Minimum water volume in the system for cooling			l	10 (4)		
	Minimum water volume in the system for heating			l	0 (4)		
Water circuit - space heating side (additional zone)	Air purge valve				Yes		
	Drain valve / fill valve				No		
	Manometer				Yes		
Water circuit - space heating side (additional zone)	Piping connections diameter			inch	G 1" (FEMALE)		
	Safety valve			bar	3		
	Shut off valve				Yes		
Water circuit - space heating side (main zone)	Air purge valve				No		
	Manometer				Yes		
	Piping connections diameter			inch	G 1 (FEMALE)		
	Safety valve			bar	Yes		
	Shut off valve				Yes		
Water circuit - Domestic hot water side	Piping material				Stainless steel		
	Piping connections	Cold water in / Hot water out		inch	G 3/4" FEMALE		
		Recirculation connection		inch	G 3/4" FEMALE		
Refrigerant circuit	Gas side diameter			mm	15.9		
	Liquid side diameter			mm	6.40		
Sound power level	Nom.			dBA	42 (5)		
Sound pressure level	Nom.			dBA	28 (6)		
Operation range	Heating	Ambient	Min.	°C	0 (7)		
			Max.	°C	0 (7)		
		Water side	Min.	°C	0 (7)		
			Max.	°C	0 (7)		
	Cooling	Ambient	Min.	°CDB	0 (7)		
			Max.	°CDB	0 (7)		
		Water side	Min.	°C	0 (7)		
			Max.	°C	0 (7)		
	Domestic hot water	Water side	Min.	°C	0 (7)		
			Max.	°C	0 (7)		
Safety devices	Item	01			Thermal cut out		

Electrical specifications					EHVZ04S18E6V	EHVZ08S18E6V	EHVZ08S23E6V
Power supply	Name				See note 10		
	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 (8)		

2 Specifications

1 - 1 EHVZ-E6V, EHVZ-E9W

Electrical specifications			EHVZ04S18E6V	EHVZ08S18E6V	EHVZ08S23E6V
Wiring connections	Communication cable	Quantity	3		
		Remark	2.5 mm²		
	Electric meter	Quantity	2		
		Remark	Minimum 0.75 mm² (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 mm² (2A inrush, 1A continuous)		
	For power supply back-up heater	Quantity	Prewired		
	For connection with R6T	Quantity	2		
		Remark	Minimum 0.75 mm²		
	For connection with A3P	Quantity	Depends on thermostat type, cf. installation manual		
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²		
	For connection with M2S	Quantity	2		
		Remark	Voltage: 230V / Max. current: 100mA / Min. 0.75mm²		
	For connection with optional FWXV* (demand	Quantity	4		
		Remark	100 mA, minimum 0.75 mm²		

(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)Based on a dT of 45 K |
(3)ncluding piping + PHE + back-up heater; excluding expansion vessel |
(4)Excluding the water in the unit. This minimum water volume is sufficient for most applications. During critical processes extra water may be required. |
(5)DB/WB 7°C/6°C - LWC 35°C (DT=5°C) |
(6)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
(7)Refer to operation range of the unit. |
(8)4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |
(9)PED unit category: Art3§3: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC |
(10)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. |
2 pole 20 A curve 400V tripping class C (refer to wiring diagram)

Technical specifications				EHVZ08S18E9W	EHVZ08S23E9W
Heater capacity	Step 1		kW	3	
	Step 2		kW	max. 6 kW	
Power input	Nom.		kW	0.14	
Efficiency	Domestic hot water	Net calorific value	%	118	135
Casing	Colour			White + Black	
	Material			Precoated sheet metal	
Dimensions	Unit	Height	mm	1,650	1,850
		Width	mm	595	
		Depth	mm	625	
	Packed unit	Height	mm	1,820	2,020
		Width	mm	720	
		Depth	mm	740	
Weight	Unit		kg	125	133
	Packed unit		kg	140	148
Packing	Material			Wood / Carton / PE wrapping foil / Metal	
	Weight		kg	16	
PED	Category			Art4.3 / See note 9	
	Most critical part	Name		Plate heat exchanger	
		Ps*V	Bar*l	37.72	
Refrigerant side heat exchanger	Type			Plate heat exchanger	
	Quantity			1	
	Plates	Quantity		42	
Pump Additional Zone	Nr of speeds			PWM	
	Power input		W	52	
	Type			Grundfos UPM 3	
Pump Main Zone	Nr of speeds			PWM	
	Power input		W	52	
	Type			Grundfos UPM 3	
Water side Heat exchanger	Type			Plate heat exchanger	
	Quantity			1	
	Plates	Quantity		42	
	Water volume		l	0.95	
	Water flow rate	Min.	l/min	12.0 (1)	
Expansion vessel	Volume		l	10	
	Max. water pressure		bar	3	
	Pre pressure		bar	1	
Water filter	Material			Stainless steel / Plastic	

2 Specifications

1 - 1 EHVZ-E6V, EHVZ-E9W

Technical specifications					EHVZ08S18E9W	EHVZ08S23E9W
Water Filter Additional Zone	Diameter perforations			mm	0.8	
	Material				Plastic / Stainless steel	
Water filter Main Zone	Diameter perforations			mm	1.0	
	Material				Copper - brass - stainless steel	
Tank	Name				Stainless steel domestic hot water tank 180 l	Stainless steel domestic hot water tank 230 L
	Water volume			l	180	230
	Material				Stainless steel (EN 1.4521)	
	Maximum water temperature			°C	70	
	Maximum water pressure			bar	10	
	Insulation	Material			Polyurethane foam	
		Heat loss		kWh/24h	1.2 (2)	1.4 (2)
	Corrosion protection				Pickling	
	Energy efficiency class				B	
	Standing heat loss			W	50	58
	Storage volume			l	181	220
General	Supplier/ Manufacturer details	Name or trademark			Daikin Europe N.V.	
		Name and address			Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium	
3-way valve	Coefficient of flow (kV)	Space heating		m^3/h	8	
		Domestic hot water tank		m^3/h	10	
3-way valve mixing	Coefficient of flow (kV)	Bypass		m^3/h	13	
		Main zone only		m^3/h	8	
Water circuit	Piping connections diameter			inch	G 1" (female)	
	Piping material				Cu	
	Internal piping diameter			inch	1"	
	Piping			inch	1"	
	Safety valve			bar	3	
	Manometer				Digital	
	Drain valve / fill valve				No	
	Shut off valve				Yes	
	Air purge valve				Yes	
	Total water volume			l	4.5 (3)	
	Minimum water volume in the system for cooling			l	10 (4)	
	Minimum water volume in the system for heating			l	0 (4)	
Water circuit - space heating side (additional zone)	Air purge valve				Yes	
	Drain valve / fill valve				No	
	Manometer				Yes	
Water circuit - space heating side (additional zone)	Piping connections diameter			inch	G 1" (FEMALE)	
	Safety valve			bar	3	
	Shut off valve				Yes	
Water circuit - space heating side (main zone)	Air purge valve				No	
	Manometer				Yes	
	Piping connections diameter			inch	G 1 (FEMALE)	
	Safety valve			bar	Yes	
	Shut off valve				Yes	
Water circuit - Domestic hot water side	Piping material				Stainless steel	
	Piping connections	Cold water in / Hot water out		inch	G 3/4" FEMALE	
		Recirculation connection		inch	G 3/4" FEMALE	
Refrigerant circuit	Gas side diameter			mm	15.9	
	Liquid side diameter			mm	6.40	
Sound power level	Nom.			dBA	42 (5)	
Sound pressure level	Nom.			dBA	28 (6)	
Operation range	Heating	Ambient	Min.	°C	0 (7)	
			Max.	°C	0 (7)	
		Water side	Min.	°C	0 (7)	
			Max.	°C	0 (7)	
	Cooling	Ambient	Min.	°CDB	0 (7)	
			Max.	°CDB	0 (7)	
		Water side	Min.	°C	0 (7)	
			Max.	°C	0 (7)	
	Domestic hot water	Water side	Min.	°C	0 (7)	
			Max.	°C	0 (7)	
Safety devices	Item	01			Thermal cut out	

Electrical specifications					EHVZ08S18E9W	EHVZ08S23E9W
Power supply	Name				See note 10	
	Voltage range	Min.		%	10	
		Max.		%	10	

2 Specifications

1 - 1 EHVZ-E6V, EHVZ-E9W

Electrical specifications				EHVZ08S18E9W	EHVZ08S23E9W
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	
		Zmax List	Ω	0.22	
	Recommended fuses		A	20.000 (8)	
Wiring connections	Communication cable	Quantity		3	
		Remark		2.5 mm²	
	Electric meter	Quantity		2	
		Remark		Minimum 0.75 mm² (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 mm² (2A inrush, 1A continuous)	
	For power supply back-up heater	Quantity		Prewired	
	For connection with R6T	Quantity		2	
		Remark		Minimum 0.75 mm²	
	For connection with A3P	Quantity		Depends on thermostat type, cf. installation manual	
		Remark		Voltage: 230V / Max. current: 100mA / Min. 0.75mm²	
	For connection with M2S	Quantity		2	
		Remark		Voltage: 230V / Max. current: 100mA / Min. 0.75mm²	
	For connection with optional FWXV* (demand	Quantity		4	
		Remark		100 mA, minimum 0.75 mm²	

(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)Based on a dT of 45 K |
(3)ncluding piping + PHE + back-up heater; excluding expansion vessel |
(4)Excluding the water in the unit. This minimum water volume is sufficient for most applications. During critical processes extra water may be required. |
(5)DB/WB 7°C/6°C - LWC 35°C (DT=5°C) |
(6)Sound values are measured in a semi-anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
(7)Refer to operation range of the unit. |
(8)4 pole 20 A curve 400V tripping class C (refer to wiring diagram) |
(9)PED unit category: Art3§3: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC |
(10)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. |
2 pole 20 A curve 400V tripping class C (refer to wiring diagram)

3 Electrical data

3 - 1 Electrical Data

EHV(H-X-Z)-E(3V_6V_9W)(G)

Electrical specifications

Not applicable for ·EHVH(04/08)D(A/J)V· models.

				3V	6V						9W			
Backup heater	Type			3V	6V						9W			
	Capacity setting		kW	3	2-4	2-6	4-6	·2-4· (in case of emergency: ·2-6·)		6	3-6	3-9	·3-6· (in case of emergency: ·3-9·)	
	Capacity stage ··			1	2	2	2	2	2	1	2	2	2	2
	Capacity stage ·1·		kW	3	2	2	2	2	2	6	3	3	3	3
	Capacity stage ·2·		kW	-	4	6	4	4	6	-	6	9	6	9
	Minimum time delay between stages			Note ·4·	Note ·5·						Note ·5·			
	Power supply (1)	Phase			1~					3~	3~			
		Frequency	Hz		50						50			
		Voltage	V		230 ±10%						400 ±10%			
	Current	Nominal running current	A	13	17,4	26,1	26,1	17,4	26,1	15	8,7	13	8,7	13
		Zmax (backup heater) (2)	Ω	0,34	0,22	0,22	0,22	0,22	0,22	-	-			
			Complex		-						-			
		Minimum Ssc value	kVA	-	(3)				(3)		-			

Notes

(1) The above-mentioned power supply of the hydrobox is for the backup heater only.
Booster heater power supply

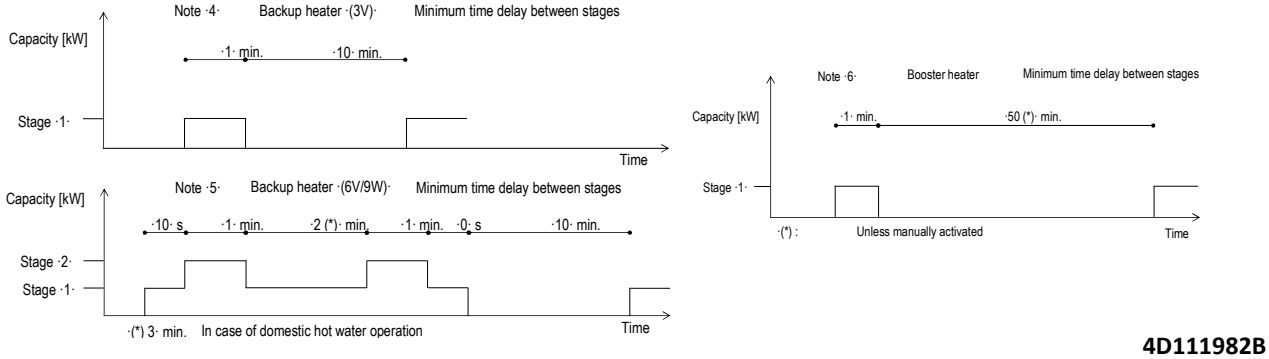
(2) In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax.

(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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3 Electrical data

3 - 1 Electrical Data

EHVX-E3V
EHV(H-X-Z)-E6V
EHV(H-X-Z)-E9W
EHVX-E6VG

* Electrical meter specification

- Pulse meter type/voltage-free contact for 5 V DC detection by PCB.
- Possible number of pulses

·0.1· pulse/kWh ·100· pulse/kWh ·10· pulse/kWh
·1· 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
- Required number of electrical meters

Outdoor unit type		ERGA(04/06/08)(D/E)AV3							ERLA03DAV3
Indoor unit type		*HB(H/X)(04/08)(D/E)A*			*HV(H/X)(04/08)(D/E)(A/J)*				EHF*03S18DJ3V
	Backup heater type	6V		9W	3V	6V		9W	3V
	Backup heater power supply	1~230V	3~230V	3~400V	1~230V	1~230V	3~230V	3~400V	1~230V
	Backup heater configuration	2/4/6kW	6kW	3/6/9kW	3kW	2/4/6kW	6kW	3/6/9kW	3kW
		Normal kWh rate power supply							
Electrical meter type	1~	1	-	-	1	1	-	-	1
	3~ balanced	-	-	-	-	-	-	-	-
	3~ unbalanced	-	1	1	-	-	1	1	-
		Preferential kWh rate power supply							
Electrical meter type	1~	2	1	1	2	2	1	1	2
	3~ balanced	-	-	-	-	-	-	-	-
	3~ unbalanced	-	1	1	-	-	1	1	-

Immersion heater (no backup heater)

Outdoor unit type		ERGA(04/06/08)DAV3
Indoor unit type		*HV(H/X)(04/08)D(A/J)V
	Backup heater type	Booster heater (·2.4· kW)
	Immersion heater power supply	1~
		230V
		Normal kWh rate power supply
Electrical meter type	1~	1
	3~ balanced	-
	3~ unbalanced	-
		Unit preferential kWh rate power supply
Electrical meter type	1~	2
	3~ balanced	-
	3~ unbalanced	-

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4 Combination table

4 - 1 Combination Table

EHVX-E3V
EHV(H-X-Z)-E6V
EHV(H-X-Z)-E9W
EHVX-E6VG

Factory-mounted equipment for ·EHV(H/X/Z)04S*E(A/J)*·

Description	EHV(H/X/Z)04S*E(A/J)*			
Heating only model ·EHVH*·		18 - 6V (9)		23 - 6V (9)
Reversible model ·EHVX*·	18 - 3V	18 - 6V (9)	23 - 3V	23 - 6V (9)
(Integrated Bizone)		18 - 6V (9)		
Heating only indoor unit for the UK		18 - 6V (9)		23 - 6V (9)
Backup heater ·3kW 1N~230 V·	o	-	o	-
Backup heater ·2-4-6kW 1N~230 V·	-	o	-	o
Backup heater ·2-4-6kW 3~230 V·	-	o	-	o
Backup heater ·3-6-9kW 3N~400 V·	-	-	-	-
Domestic hot water tank ·180L·	o	o	-	-
Domestic hot water tank ·230L·	-	-	o	o

Factory-mounted equipment for ·EHV(H/X/Z)08S*E(A/J)*·

Description	EHV(H/X/Z)08S*E(A/J)*			
Heating only model ·EHVH*·	18 - 6V (9)	18 - 9W (9)	23 - 6V (9)	23 - 9W (9)
Reversible model ·EHVX*·	18 - 6V (9)	18 - 9W (9)	23 - 6V (9)	23 - 9W (9)
(Integrated Bizone)	18 - 6V (9)	18 - 9W (9)	23 - 6V (9)	23 - 9W (9)
Heating only indoor unit for the UK	18 - 6V (9)		23 - 6V (9)	
Backup heater ·3kW 1N~230 V·	-	-	-	-
Backup heater ·2-4-6kW 1N~230 V·	o	-	o	-
Backup heater ·2-4-6kW 3~230 V·	o	-	o	-
Backup heater ·3-6-9kW 3N~400 V·	-	o	-	o
Domestic hot water tank ·180L·	o	o	-	-
Domestic hot water tank ·230L·	-	-	o	o

Outdoor combination table for ·EHV(H/X/Z)(04/08)S(U)(18/23)E(A/J)*·

		ERGA04EAV3	ERGA06EAV3	ERGA08EAV3	ERGA04EAV3A	ERGA06EAV3A	ERGA08EAV3A	ERGA04EAV37
EHVH04S(18/23)E(A/J)*	Heating only indoor unit	o	---	---	o	---	---	o
EHVX04S(18/23)E(A/J)*	Reversible indoor unit	o	---	---	o	---	---	o
EHVZ04S(18/23)E(A/J)*	(Integrated Bizone)	o	---	---	o	---	---	---
EHVH04SU(18/23)E(A/J)*	Heating only indoor unit for the UK	o	---	---	o	---	---	---
EHVH08S(18/23)E(A/J)*	Heating only indoor unit	---	o	o	---	o	o	---
EHVX08S(18/23)E(A/J)*	Reversible indoor unit	---	o	o	---	o	o	---
EHVZ08S(18/23)E(A/J)*	(Integrated Bizone)	---	o	o	---	o	o	---
EHVH08SU(18/23)E(A/J)*	Heating only indoor unit for the UK	---	o	o	---	o	o	---

Kit availability

Reference	Description		EHV*(04/08)S*E(A/J)*						EHVH(04/08)SU*E(A/J)*	
EHVH*	Heating only indoor unit		---	18 - 6V	18 - 9W	---	23 - 6V	23 - 9W		
EHVX*	Reversible indoor unit		18 - 3V	18 - 6V	18 - 9W	23 - 3V	23 - 6V	23 - 9W		
EHVZ*	(Integrated Bizone)		---	18 - 6V	18 - 9W	---	23 - 6V	23 - 9W		
EHVH*U*	Heating only indoor unit for the UK								18 - 6V	23 - 6V
EKRP1HBAA	Digital I/O PCB	*(1) (2)	o	o	o	o	o	o	o	o
EKRP1AHTA	Demand PCB	*(3)	o	o	o	o	o	o	o	o
EKPCCAB4	PC cable	*(4)	o	o	o	o	o	o	o	o
KRCS01-1	Remote indoor sensor	*(5)	o	o	o	o	o	o	o	o
EKRSCA1	Remote sensor for outdoor	*(5)	o	o	o	o	o	o	o	o
EKHVTC	Corner pipe bend kit									
EKHVCONV4	Conversion kit: heating only to reversible.		o	o	o	o	o	o	o	o
EKUHWG3D	·G3· kit								o (6)	o (6)
BRP069A71	WLAN module	*(7)	o	o	o	o	o	o	o	o
BRC1HH*	HCI (Human Comfort Interface)		o	o	o	o	o	o	o	o
EKRELSG	Relay for Smart Grid									
FWXV10ATV3	Heat pump convector		o	o	o	o	o	o	o	o
FWXV15ATV3	Heat pump convector		o	o	o	o	o	o	o	o
FWXV20ATV3	Heat pump convector		o	o	o	o	o	o	o	o
EKRTWA	Wired room thermostat		o	o	o	o	o	o	o	o
EKRTR1	Wireless room thermostat		o	o	o	o	o	o	o	o
EKRTETS	External sensor room thermostat	*(8)	o	o	o	o	o	o	o	o

Reference	Description		
	Only applicable for ·EHVH* & EHVX*· models	EHVH*	EHVX*
BZKA7V3	Bizone kit	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 OR bottom plate heater ·*KBPHTH16* · control.
  (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, only for ·EHV(H/X/Z)(04/08)E(A/J)*·.
(4) Data cable for connection with PC.
(5) Only 1 remote sensor can be connected: indoor OR outdoor sensor.
(6) This kit is mandatory for the UK models.
(7) 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.
(8) Can only be used in combination with wireless room thermostat ·EKRTR1·.
(9) The backup heater capacity depends on a user interface setting.

Remark

Other combinations than mentioned in this combination table are prohibited.

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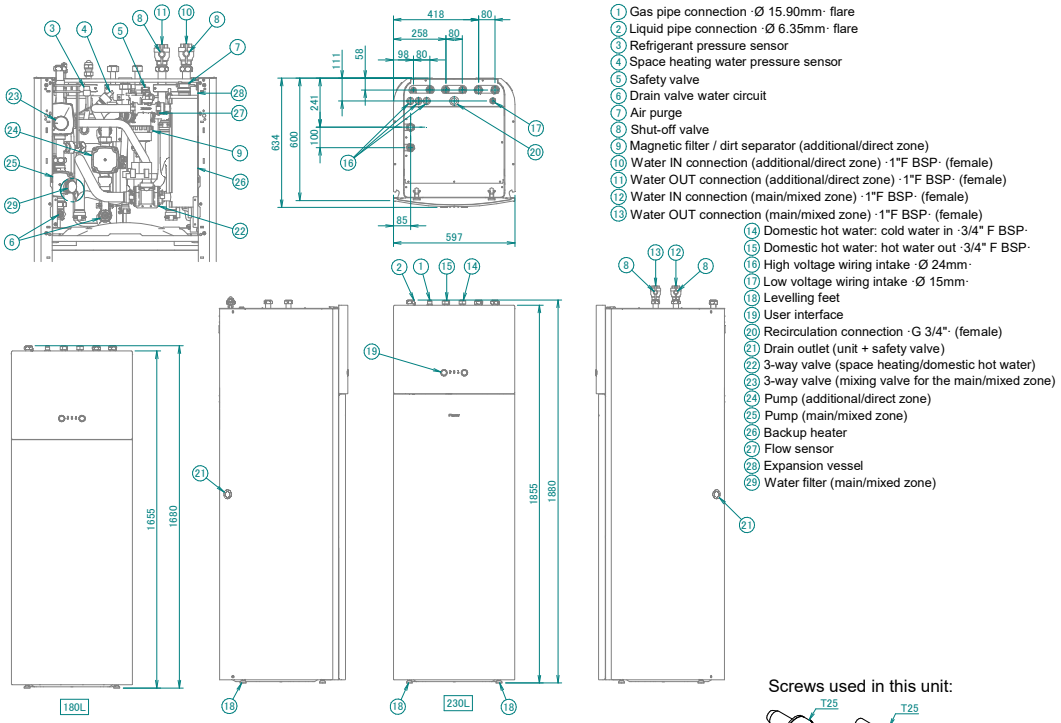
5 Dimensional drawings

5 - 1 Dimensional Drawings

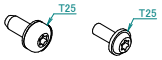
EHVZ-E6V
EHVZ-E9W

The additional zone is the temperature zone with the highest temperature.
The main zone is the temperature zone with the lowest temperature.



1. Gas pipe connection ·Ø 15.90mm· flare
2. Liquid pipe connection ·Ø 6.35mm· flare
3. Refrigerant pressure sensor
4. Space heating water pressure sensor
5. Safety valve
6. Drain valve water circuit
7. Air purge
8. Shut-off valve
9. Magnetic filter / dirt separator (additional/direct zone)
10. Water IN connection (additional/direct zone) ·1"F BSP· (female)
11. Water OUT connection (additional/direct zone) ·1"F BSP· (female)
12. Water IN connection (main/mixed zone) ·1"F BSP· (female)
13. Water OUT connection (main/mixed zone) ·1"F BSP· (female)
14. Domestic hot water: cold water in ·3/4" F BSP·
15. Domestic hot water: hot water out ·3/4" F BSP·
16. High voltage wiring intake ·Ø 24mm·
17. Low voltage wiring intake ·Ø 15mm·
18. Levelling feet
19. User interface
20. Recirculation connection ·G 3/4"· (female)
21. Drain outlet (unit + safety valve)
22. 3-way valve (space heating/domestic hot water)
23. 3-way valve (mixing valve for the main/mixed zone)
24. Pump (additional/direct zone)
25. Pump (main/mixed zone)
26. Backup heater
27. Flow sensor
28. Expansion vessel
29. Water filter (main/mixed zone)

Screws used in this unit:



The typical field installation has to be done according to the applicable legislation.

For examples, refer to the installer reference guide.

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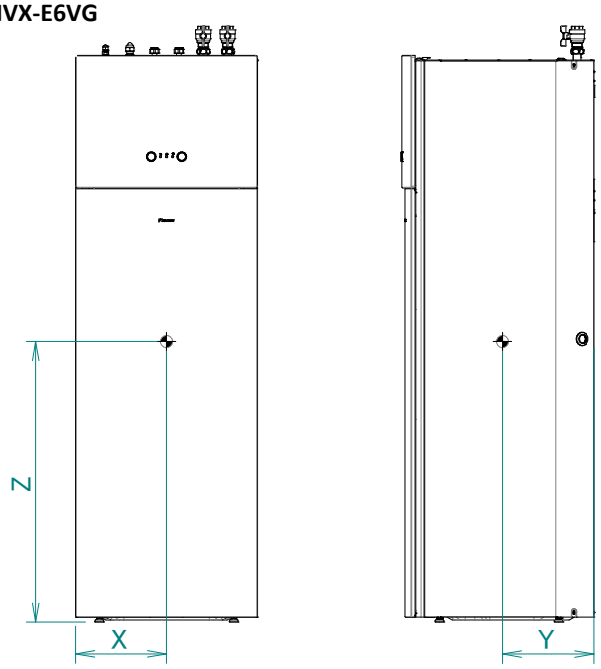
6 Centre of gravity

6 - 1 Centre of Gravity

EHVX-E3V
EHV(H-X-Z)-E6V
EHV(H-X-Z)-E9W
EHVX-E6VG



MODEL	X	Y	Z
180L	297.5	299	718
230L	297.5	299	858

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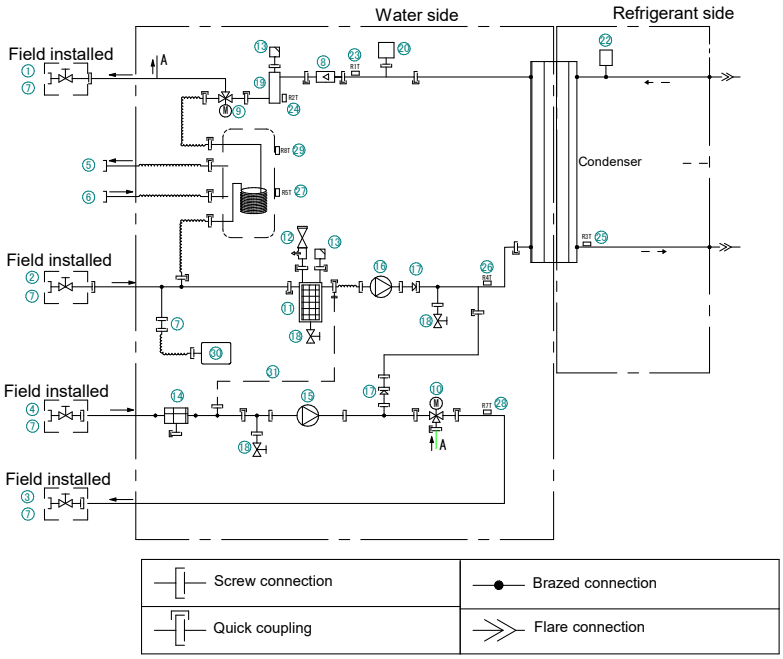
7 Piping diagrams

7 - 1 Piping Diagrams

EHVZ-E6V
EHVZ-E9W



(1) Space heating - water OUT (additional/direct zone)
(2) Space heating - water IN (additional/direct zone)
(3) Space heating - water OUT (main/mixed zone)
(4) Space heating - water IN (main/mixed zone)
(5) Domestic hot water: hot water out
(6) Domestic hot water: cold water in
(7) Connection
(8) Flow sensor
(9) 3-way valve (space heating/domestic hot water)
(10) 3-way valve (mixing valve for the main/mixed zone)
(11) Magnetic filter / dirt separator
(12) Safety valve
(13) Air purge
(14) Water filter (main/mixed zone)
(15) Pump (main/mixed zone)
(16) Pump (additional/direct zone)
(17) Check valve
(18) Drain valve
(19) Backup heater
(20) Space heating water pressure sensor
(21) Plate heat exchanger
(22) Refrigerant pressure sensor
(23) R1T – Outlet water heat exchanger thermistor
(24) R2T – Outlet water backup heater thermistor
(25) R3T – Thermistor (heat exchanger, liquid pipe)
(26) R4T – Inlet water thermistor
(27) R5T – Tank thermistor
(28) R7T – Water outlet thermistor (main/mixed zone)
(29) R8T – Tank thermistor
(30) Expansion vessel
(31) Capillary tube

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8 Wiring diagrams

8 - 1 Notes & Legend

EHVZ-E6V
EHVZ-E9W

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
X10M : Smartgrid terminal
——— : Earth wiring
– – – – – : Field supply
(1) : Several wiring possibilities


: Option


: Wiring depending on model


: Not mounted in switch box


: PCB

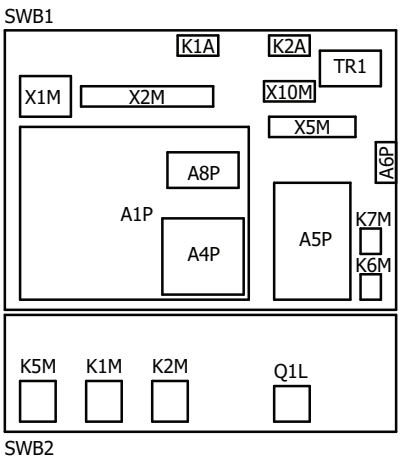
Backup heater power supply
- ☐ 6T1 (3~, 230V, 6kW)
- ☐ 6V3 (1N~, 230V, 6kW)
- ☐ 6WN/9WN (3N~, 400V, 6/9kW)

User installed options:
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Digital I/O PCB
- ☐ Demand PCB
- ☐ Safety thermostat
- ☐ Smartgrid
- ☐ WLAN adapter module
- ☐ WLAN cartridge

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



NOTES

1. Connection point of the power supply for the BUH should be foreseen outside the unit.

LEGEND

Part n°		Description
A1P		main PCB
A2P	*	ON/OFF thermostat (PC = power circuit)
A3P	*	heat pump convector
A4P	*	digital I/O PCB
A5P		bizone PCB
A6P		current loop PCB
A8P	*	demand PCB
A9P		status indicator
A11P		MMI main PCB
A14P	*	user interface PCB
A15P	*	receiver PCB (wireless ON/OFF thermostat)
A20P	*	WLAN module
B2L		flow sensor
B1PR		refrigerant pressure sensor
B1PW		water pressure sensor
CN* (A4P)	*	connector
DS1 (A5P)		dipswitch
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
F1U, F2U (A4P)	*	fuse 5 A 250 V for digital I/O PCB
F1U, F2U (A5P)		fuse T 3.15 A 250 V for PCB
FU1 (A1P)		fuse T 5 A 250 V for PCB
K1A, K2A	*	high voltage smartgrid relay
K1M, K2M		contactor backup heater
K5M		safety contactor BUH
K6M		relay 3 way valve bypass
K7M		relay 3 way valve flow
K*R (A1P, A4P)		relay on PCB
M1P		additional zone pump
M1S		mixing 3 way valve
M2P	#	domestic hot water pump
M2S	#	2 way valve for cooling mode
M3P		main zone pump
M3S		3 way valve for space heating / domestic hot water

Part n°		Description
P1M		MMI display
PC (A15P)	*	power circuit
PHC1 (A4P)	*	optocoupler input circuit
Q1L		thermal protector backup heater
Q3L, Q4L	#	safety thermostat
Q*DI	#	earth leakage circuit breaker
R1H (A2P)	*	humidity sensor
R1T (A1P)		outlet water heat exchanger thermistor
R1T (A2P)	*	ambient sensor ON/OFF thermostat
R1T (A14P)	*	ambient sensor user interface
R2T (A1P)		outlet backup heater thermistor
R2T (A2P)	*	external sensor (floor or ambient)
R3T		refrigerant liquid side thermistor
R4T		inlet water thermistor
R5T, R8T		domestic hot water thermistor
R6T	*	external indoor or outdoor ambient thermistor
R7T		mixed leaving water thermistor
S1S	#	preferential kWh rate PS contact
S2S	#	electrical meter pulse input 1
S3S	#	electrical meter pulse input 2
S4S	#	smartgrid feed-in
S6S-S9S	*	digital power limitation inputs
S10S-S11S	#	low voltage smartgrid contact
SS1 (A4P)	*	selector switch
SW1~2 (A12P)		turn buttons
SW3~5 (A12P)		push button
TR1		power supply transformer
X6M	#	BUH power supply terminal strip
X10M	*	smartgrid power supply terminal strip
X*, X*A, X*H*, X*Y		connector
X*M		terminal strip

* : optional
# : field supply

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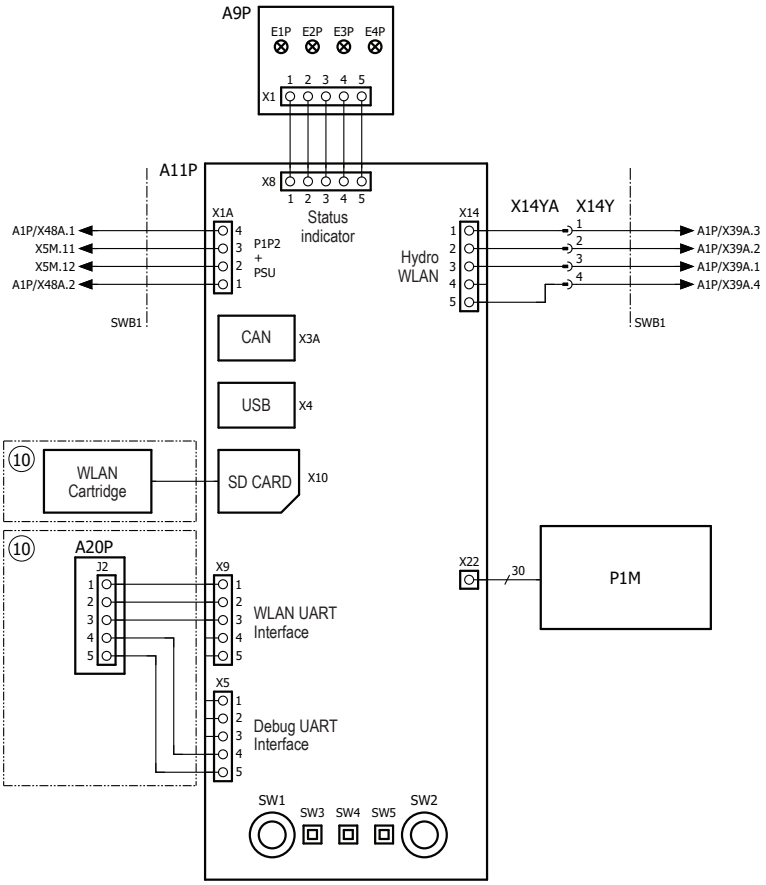
8 Wiring diagrams

8 - 2 Control Circuit

EHVZ-E6V
EHVZ-E9W



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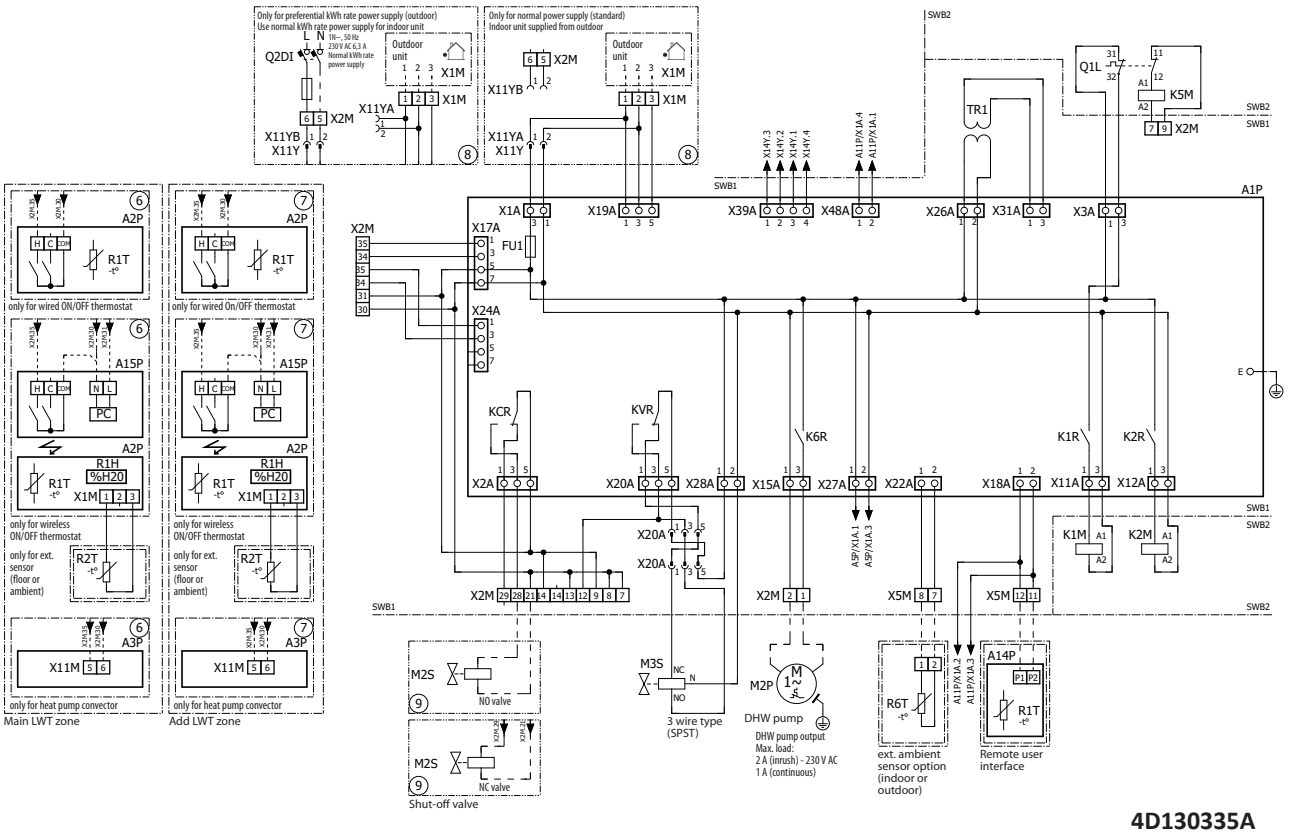
EHVZ-E6V
EHVZ-E9W



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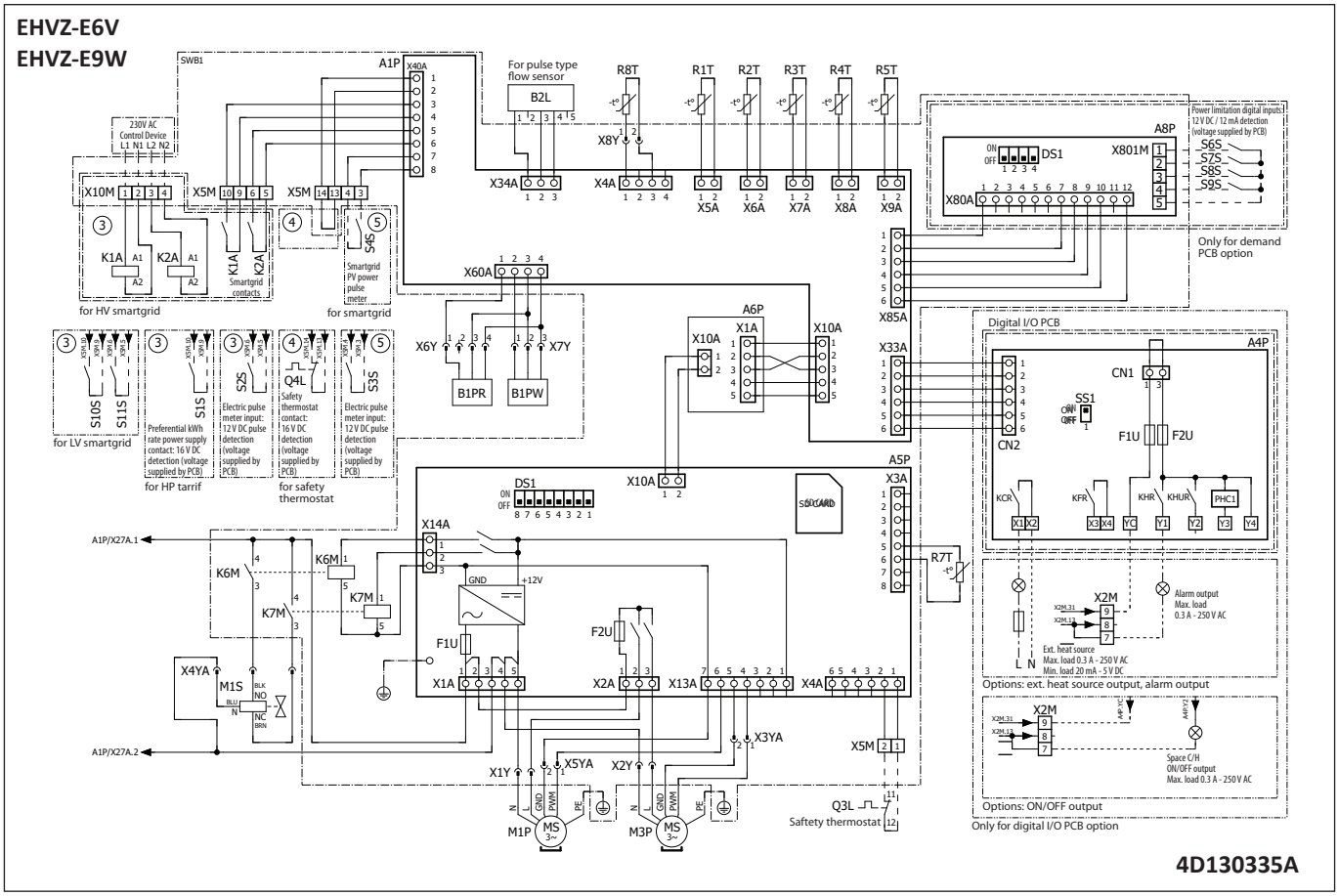
8 Wiring diagrams

8 - 2 Control Circuit

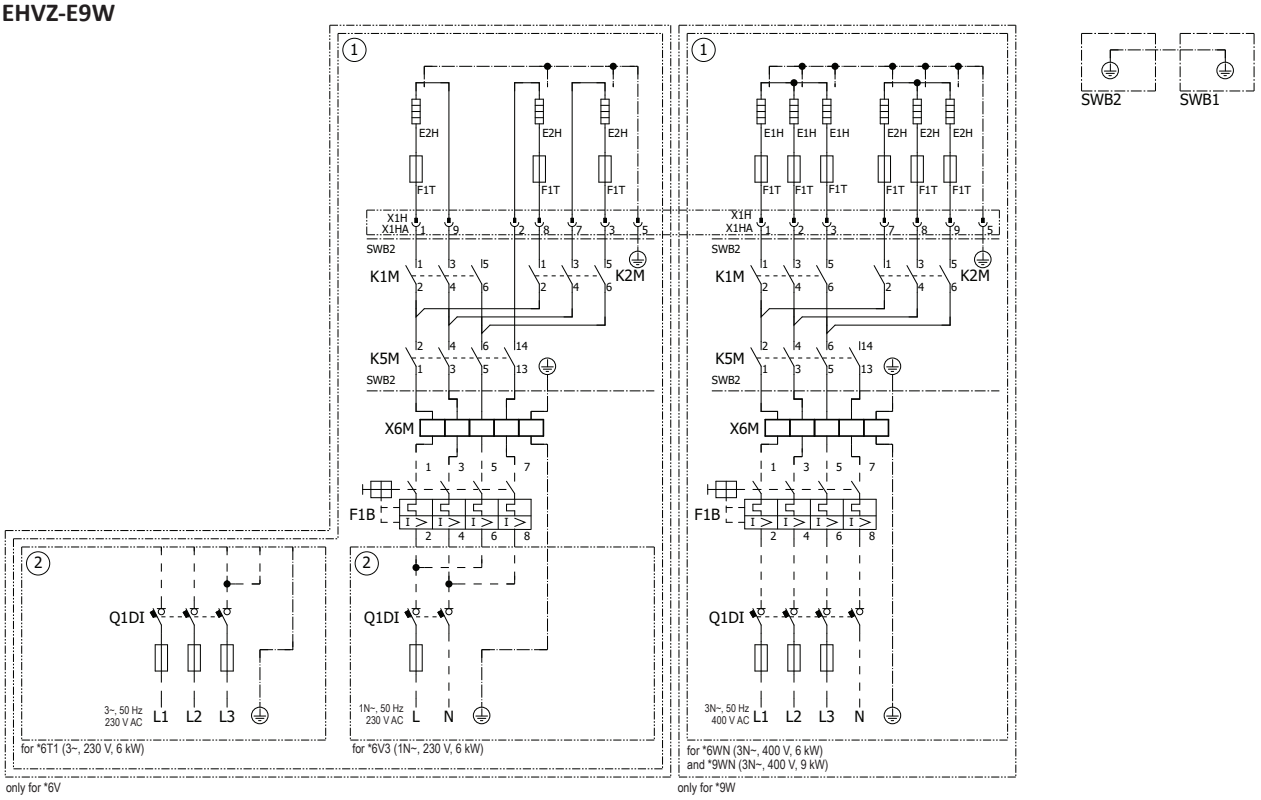
EHVZ-E6V
EHVZ-E9W



8 Wiring diagrams

8 - 3 Power Supply, Back-up Heater

EHVZ-E6V
EHVZ-E9W



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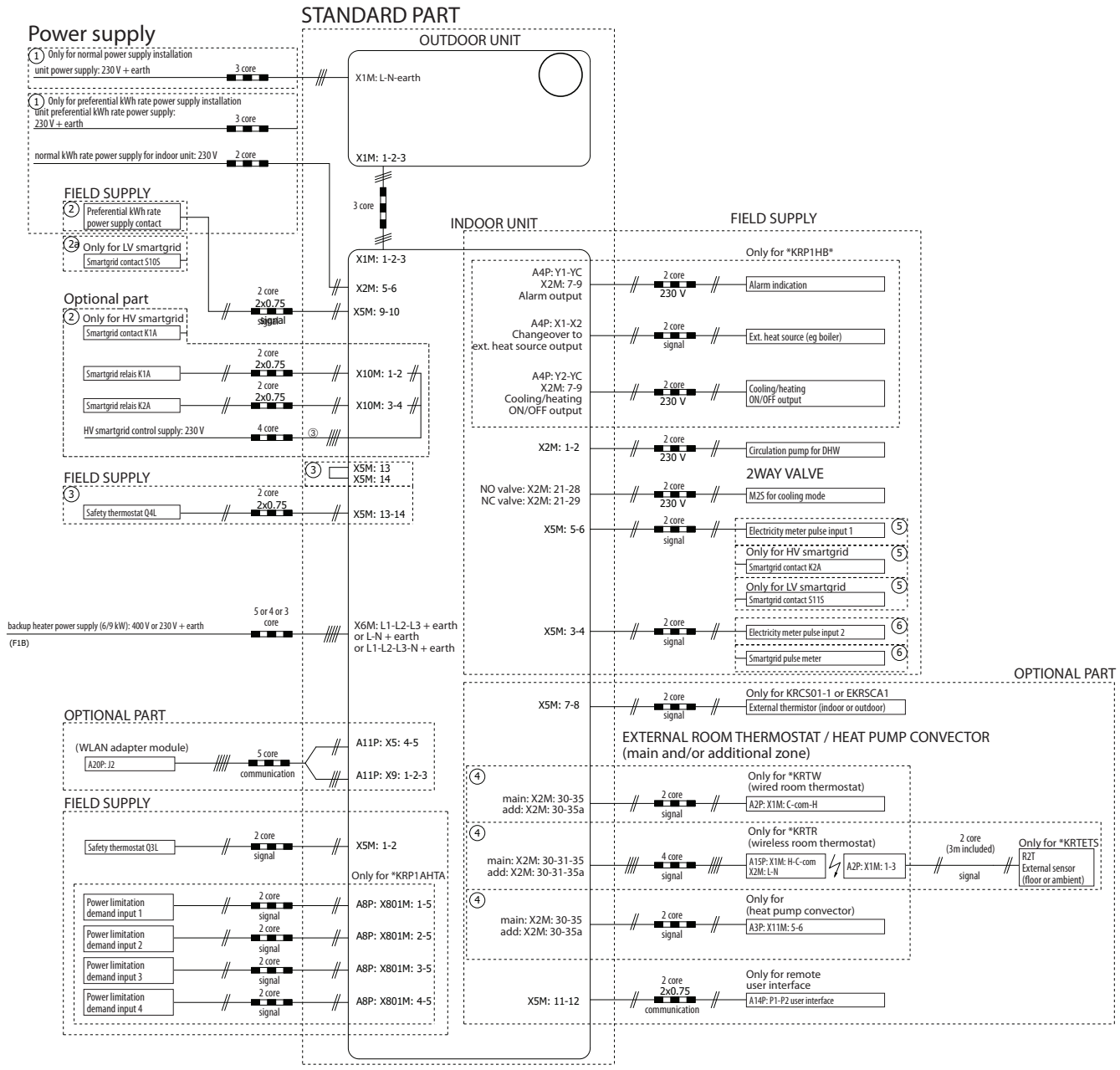
9 External connection diagrams

9 - 1 External Connection Diagrams

EHVZ-E6V
EHVZ-E9W

Electrical connection diagram Altherma BML BZ - E-series



NOTE

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

For more details please check unit wiring

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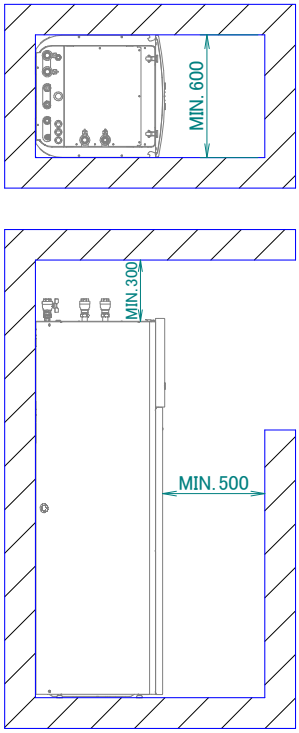
10 Installation

10 - 1 Installation Method

EHVZ-E6V
EHVZ-E9W



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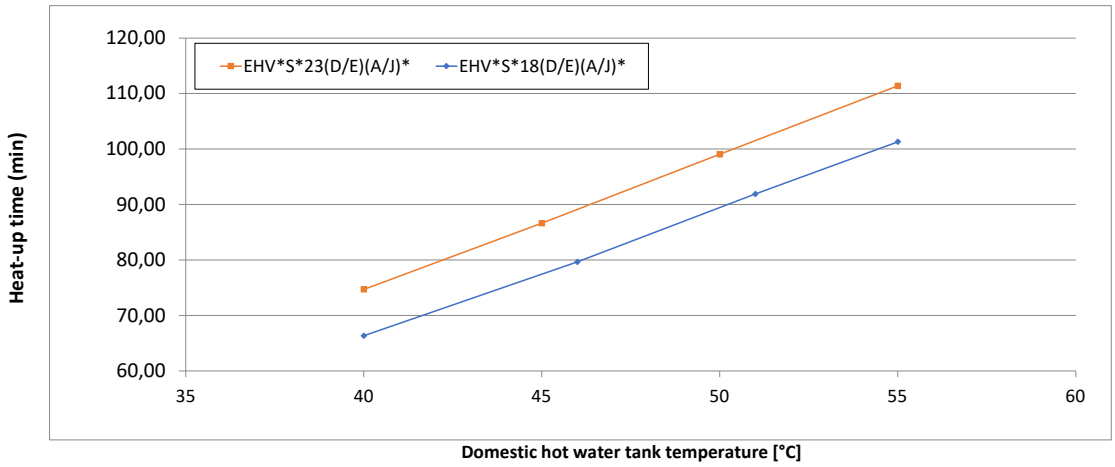
11 Operation range

11 - 1 Operation Range

11

EHVX-E3V
EHV(H-X-Z)-E6V
EHV(H-X-Z)-E9W
EHVX-E6VG

Heat-up times



	Heat-up time domestic hot water tank until 45°C
EHV*04S*18(D/E)(A/J)*	·79· min.
EHV*08S*23(D/E)(A/J)*	·87· min.

Notes

1. Time the indoor unit (**heat pump only operation**) requires to heat up the domestic hot water tank from 10°C to the indicated temperature.

   See the operation range for maximum domestic hot water tank temperature during heat pump only operation.

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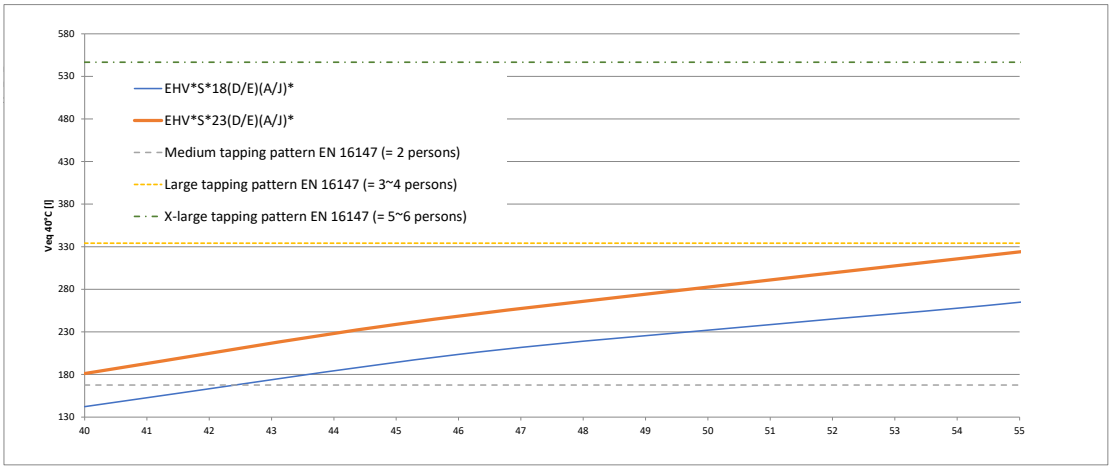
EHVX-E3V
EHV(H-X-Z)-E6V
EHV(H-X-Z)-E9W
EHVX-E6VG

Selection guide for the domestic hot water tank volume

(1)

Veq 40°C = the amount of water with a temperature of 40°C that can be tapped when the domestic hot water tank is heated to a certain temperature, and the temperature of the cold inlet water is 10°C.



If a higher daily Veq 40°C is required, then additional heat-up cycles are required within 24 hours.

See the operation manual for more information.

Notes

(1) According to EN16147.

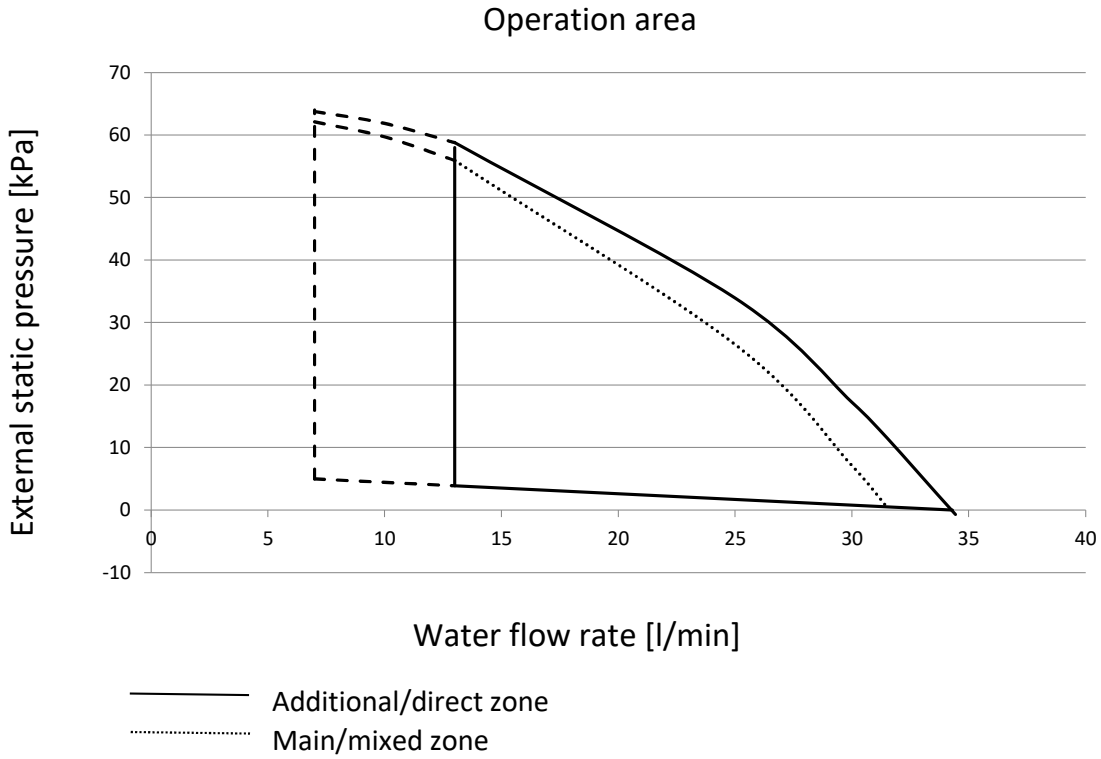
4D113329C

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

EHVZ-E6V
EHVZ-E9W

EHVZ(04/08)*(D/E)(A/J)*



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.

4D112013B

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