DAIKIN

EEDEN09-720

technical data

Altherma™

R-410A

altherma™

Altherma™

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrige-rants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

ISO14001 assures an effective environmental management system in order to help protect human health and the environment from potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.

Daikin units comply with the European regulations that guarantee the safety of the product.

DAIKIN EUROPE N.V.

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RPR Oostende

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technical data

Altherma™

R-410A

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Heating only

Heat pump

DAIKIN

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technical data

Altherma™

R-410A

Part 1/4:
ERHQ006-008AD
EKHBH/X008AA

altherma™

TABLE OF CONTENTS

ERHQ006-008AD

1 Features

- Small capacity outdoor unit
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				ERHQ006AD	ERHQ007AD	ERHQ008AD
For combination indoor units + outdoor units	Indoor Units			EKHBH008AA		
Condition 1	Heating capacity	Minimum	kW	4.36	4.36	4.36
		Nominal	kW	5.75	6.84	8.43
		Maximum	kW	7.45	8.79	9.58
	Heating PI	Nominal	kW	1.26	1.58	2.08
	COP	Nominal		4.56	4.34	4.05
Nominal Capacity	Heating capacity	Minimum	kW	3.87	3.87	3.87
		Nominal	kW	5.03	6.10	7.64
		Maximum	kW	6.68	7.98	8.76
	Heating PI	Nominal	kW	1.58	1.95	2.54
	COP	Nominal		3.18	3.13	3.00
For combination indoor units + outdoor units	Indoor Units			EKHBX008AA		
Condition 1	Heating capacity	Minimum	kW	4.36	4.36	4.36
		Nominal	kW	5.75	6.84	8.43
		Maximum	kW	7.45	8.79	9.58
	Cooling capacity	Minimum	kW	4.82	4.82	4.82
		Nominal	kW	7.20	8.16	8.37
		Maximum	kW	7.20	8.50	8.91
	Heating PI	Nominal	kW	1.26	1.58	2.08
	Cooling PI	Nominal	kW	2.27	2.78	2.97
	COP	Nominal		4.56	4.34	4.05
	EER	Nominal		3.17	2.94	2.82
Nominal Capacity	Heating capacity	Minimum	kW	3.87	3.87	3.87
		Nominal	kW	5.03	6.10	7.64
		Maximum	kW	6.68	7.98	8.76
	Cooling capacity	Minimum	kW	3.67	3.67	3.67
		Nominal	kW	5.12	5.86	6.08
		Maximum	kW	5.12	6.13	7.10
	Heating PI	Nominal	kW	1.58	1.95	2.54
	Cooling PI	Nominal	kW	2.16	2.59	2.75
	COP	Nominal		3.18	3.13	3.00
	EER	Nominal		2.37	2.26	2.21
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (DT = 5°C) - heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (DT = 5°C) - heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)		

2-2 TECHNICAL SPECIFICATIONS				ERHQ006AD	ERHQ007AD	ERHQ008AD
Casing	Colour			Ivory white		
	Material			Polyester painted galvanised steel		
Dimensions	Unit	Height	mm	735	735	735
		Width	mm	825	825	825
		Depth	mm	300	300	300
	Packing	Height	mm	797	797	797
		Width	mm	960	960	960
		Depth	mm	390	390	390
Weight	Unit		kg	56	56	56
	Packed Unit		kg	61	61	61
Packing	Material			EPS		
				Carton		
	Weight		kg	5	5	5

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ006AD	ERHQ007AD	ERHQ008AD
Heat Exchanger	Dimensions	Length	mm	845	845	845
		Nr of Rows		2	2	2
		Fin Pitch	mm	1.8	1.8	1.8
		Nr of Stages		32	32	32
	Tube type			Hi-Xa(8)		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			1	1	1
	Discharge direction			Horizontal		
	Motor	Quantity		1	1	1
		Output	W	53	53	53
Compressor	Quantity			1	1	1
	Motor	Model		2YC63BXD#C		
		Type		Hermetically sealed swing compressor		
		Motor Output	W	1,920		
Operation Range	Heating	Min	°CWB	-20	-20	-20
		Max	°CWB	25	25	25
	Cooling	Min	°CDB	10	10	10
		Max	°CDB	43	43	43
	Sanitary water	Min	°CDB	-20	-20	-20
		Max	°CDB	43	43	43
Sound Level (nominal)	Heating	Sound Power	dBA	61	61	62
		Sound Pressure	dBA	48	48	49
	Cooling	Sound Power	dBA	63	63	63
		Sound Pressure	dBA	48	48	50
Refrigerant	Type			R-410A		
	Charge		kg	1.7	1.7	1.7
	Control			Expansion valve(electronic type)		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			FVC50K		
	Charged Volume		l	0.75	0.75	0.75
Piping connections	Liquid (OD)	Type		Flare connection		
		Diameter (OD)	mm	6,35		
	Gas	Type		Flare connection		
		Diameter (OD)	mm	15,9		
	Drain	Quantity		1	1	1
		Type		Socket		
		Diameter (OD)	mm	18	18	18
	Piping Length	Minimum	m	3	3	3
		Maximum	m	30	30	30
	Additional Refrigerant Charge		kg/m	0.02>10m		
	Max. internunit level difference		m	20	20	20
Defrost Method				Reverse cycle		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		

2 Specifications

2-2 TECHNICAL SPECIFICATIONS		ERHQ006AD	ERHQ007AD	ERHQ008AD
Standard Accessories	Item	Installation manual		
	Quantity	1	1	1
	Item	Drain plug		
	Quantity	1	1	1
Notes		See operation range drawing		
		The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		

2-3 ELECTRICAL SPECIFICATIONS				ERHQ006AD	ERHQ007AD	ERHQ008AD
Power Supply	Name			V3		
	Phase			1~		
	Frequency		Hz	50	50	50
	Voltage		V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Starting current	Heating	A	11	11	11
		Cooling	A	11	11	11
	Maximum running Current	Heating	A	18	18	18
		Cooling	A	16.25	16.25	16.25
	Recomended fuses		A	20	20	20
Wiring connections	For Power Supply	Quantity		3	3	3
	For connection with indoor	Quantity		4	4	4
		Remark		Included earth wiring		

3 Capacity tables

3 - 1 Cooling/Heating capacity tables

COOLING

Model	Tamb (°C)	20		25		30		35		40		43	
	LWE (°C)	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
006	7	6.01	1.56	5.73	1.75	5.43	1.95	5.12	2.16	4.80	2.39	4.59	2.53
	11	6.81	1.57	6.50	1.77	6.17	1.98	5.83	2.21	5.30	2.32	4.98	2.38
	13	7.23	1.57	6.90	1.78	6.56	2.00	6.20	2.23	5.56	2.28	5.18	2.30
	16	7.88	1.56	7.54	1.78	7.17	2.01	6.79	2.26	5.95	2.22	5.46	2.18
	20	8.80	1.55	8.42	1.79	8.03	2.03	7.63	2.29	6.48	2.13	5.82	1.99
007	7	7.15	2.05	6.84	2.28	6.50	2.52	6.13	2.77	5.35	2.68	4.89	2.59
	11	8.09	2.09	7.73	2.34	7.34	2.59	6.94	2.87	5.84	2.62	5.21	2.43
	13	8.57	2.11	8.20	2.36	7.79	2.63	7.36	2.91	6.09	2.59	5.36	2.34
	16	9.33	2.13	8.92	2.40	8.49	2.68	8.03	2.97	6.46	2.53	5.57	2.20
	20	10.4	2.16	9.9	2.44	9.48	2.73	8.99	3.04	6.96	2.44	5.82	1.99
008	7	8.24	2.43	7.90	2.68	7.52	2.94	7.10	3.23	5.68	2.86	4.87	2.59
	11	9.26	2.49	8.87	2.76	8.45	3.05	7.79	3.31	6.12	2.80	5.18	2.43
	13	9.79	2.52	9.38	2.80	8.93	3.10	8.14	3.36	6.34	2.77	5.33	2.35
	16	10.6	2.57	10.17	2.86	9.69	3.17	8.68	3.41	6.67	2.71	5.55	2.20
	20	11.7	2.63	11.3	2.94	10.75	3.26	9.39	3.48	7.09	2.61	5.80	1.99

HEATING (Peak values)

Model	LWC	30		35		40		45		50	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
006	-15	3.93	1.48	3.67	1.59	3.47	1.71	3.33	1.84	3.25	1.99
	-10	4.65	1.52	4.32	1.65	4.07	1.79	3.89	1.94	3.78	2.10
	-7	5.14	1.54	4.77	1.68	4.49	1.83	4.28	1.99	4.15	2.16
	-2	6.06	1.57	5.62	1.72	5.28	1.88	5.03	2.06	4.87	2.25
	2	6.89	1.57	6.38	1.74	6.00	1.91	5.72	2.11	5.53	2.31
	7	8.03	1.57	7.45	1.75	7.00	1.94	6.68	2.15	6.47	2.37
007	-15	4.87	1.82	4.62	1.94	4.43	2.08	4.30	2.23	4.24	2.40
	-10	5.67	1.88	5.34	2.02	5.09	2.18	4.92	2.36	4.82	2.55
	-7	6.21	1.91	5.83	2.07	5.55	2.24	5.35	2.42	5.23	2.63
	-2	7.23	1.95	6.77	2.13	6.42	2.32	6.17	2.52	6.02	2.75
	2	8.14	1.97	7.61	2.16	7.21	2.37	6.92	2.59	6.74	2.83
	7	9.40	1.98	8.79	2.19	8.32	2.42	7.98	2.66	7.78	2.92
008	-15	5.42	2.06	5.16	2.19	4.97	2.34	4.86	2.51	4.80	2.70
	-10	6.27	2.13	5.93	2.29	5.68	2.46	5.51	2.65	5.42	2.86
	-7	6.84	2.17	6.46	2.34	6.17	2.53	5.97	2.73	5.86	2.95
	-2	7.92	2.22	7.45	2.41	7.10	2.62	6.85	2.85	6.70	3.10
	2	8.9	2.26	8.35	2.46	7.93	2.69	7.65	2.93	7.47	3.20
	7	10.2	2.28	9.58	2.51	9.10	2.76	8.76	3.02	8.56	3.31

HEATING (integrated values*)

Model	LWC	30		35		40		45		50	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
006	-15	3.50	1.40	3.27	1.51	3.09	1.62	2.97	1.75	2.89	1.89
	-10	4.14	1.45	3.85	1.56	3.62	1.70	3.46	1.84	3.36	2.00
	-7	4.52	1.45	4.20	1.58	3.95	1.72	3.77	1.87	3.65	2.03
	-2	5.27	1.46	4.89	1.60	4.59	1.75	4.38	1.92	4.24	2.10
	2	5.92	1.45	5.49	1.60	5.16	1.76	4.92	1.94	4.76	2.13
	7	8.03	1.57	7.45	1.75	7.00	1.94	6.68	2.15	6.47	2.37
007	-15	4.34	1.73	4.11	1.85	3.94	1.98	3.83	2.12	3.77	2.28
	-10	5.04	1.79	4.75	1.92	4.53	2.07	4.38	2.24	4.29	2.42
	-7	5.46	1.80	5.13	1.94	4.88	2.10	4.71	2.28	4.60	2.47
	-2	6.29	1.81	5.89	1.98	5.59	2.15	5.37	2.35	5.23	2.56
	2	7.00	1.81	6.55	1.99	6.20	2.18	5.96	2.38	5.80	2.61
	7	9.40	1.98	8.79	2.19	8.32	2.42	7.98	2.66	7.78	2.92
008	-15	4.82	1.96	4.59	2.08	4.43	2.23	4.32	2.39	4.27	2.56
	-10	5.58	2.03	5.28	2.17	5.06	2.34	4.91	2.52	4.82	2.72
	-7	6.02	2.04	5.69	2.20	5.43	2.37	5.26	2.57	5.15	2.78
	-2	6.89	2.07	6.48	2.25	6.17	2.44	5.96	2.65	5.83	2.88
	2	7.6	2.08	7.18	2.27	6.82	2.47	6.58	2.70	6.43	2.94
	7	10.2	2.28	9.58	2.51	9.10	2.76	8.76	3.02	8.56	3.31

* The integrated heating capacity and power input, is the average heating capacity and power input during 1 cycle. (from end of defrost till end of the next defrost).

3TW57782-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

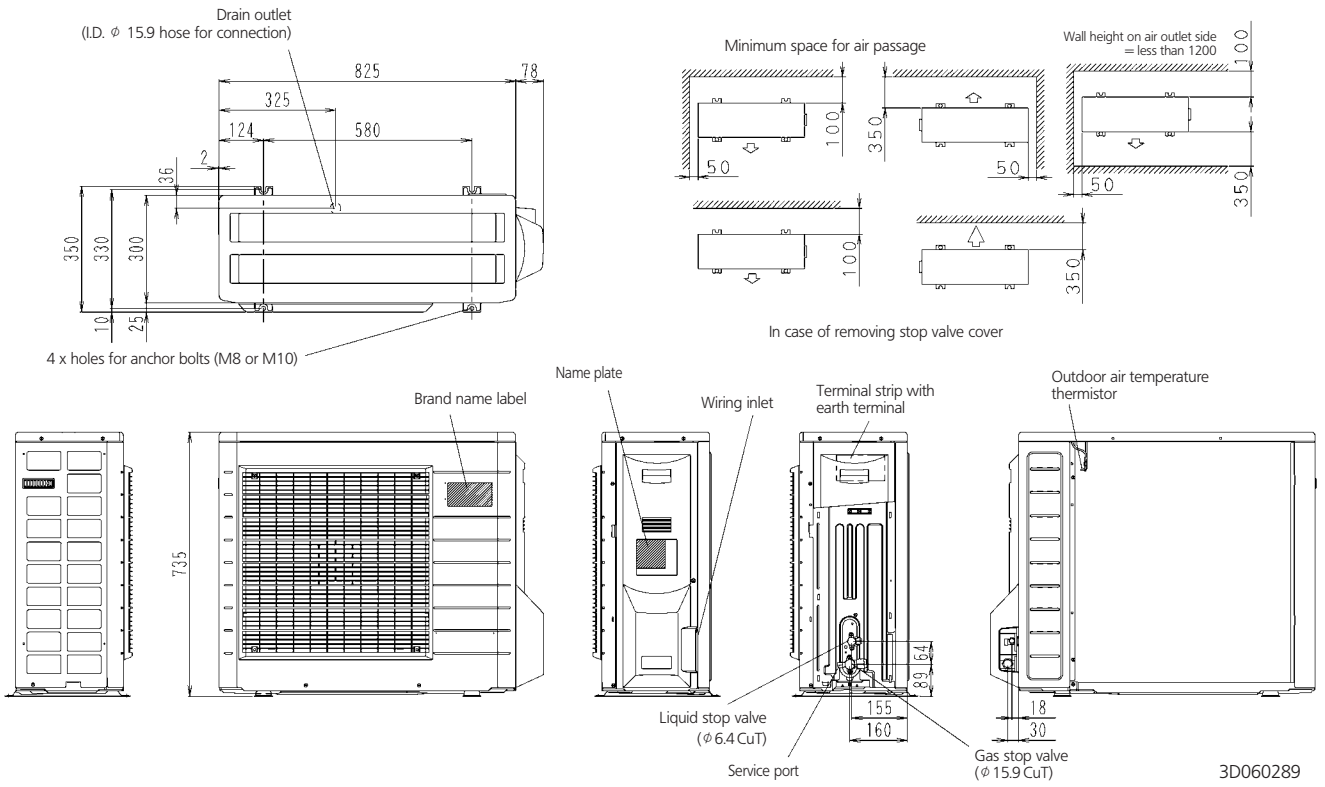
3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 60 W (according EN14511).
For the optional model with heatertape (V38) when ambient temperature becomes lower than 4°C: add power input of 60W

4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

ERHQ006-008 AD

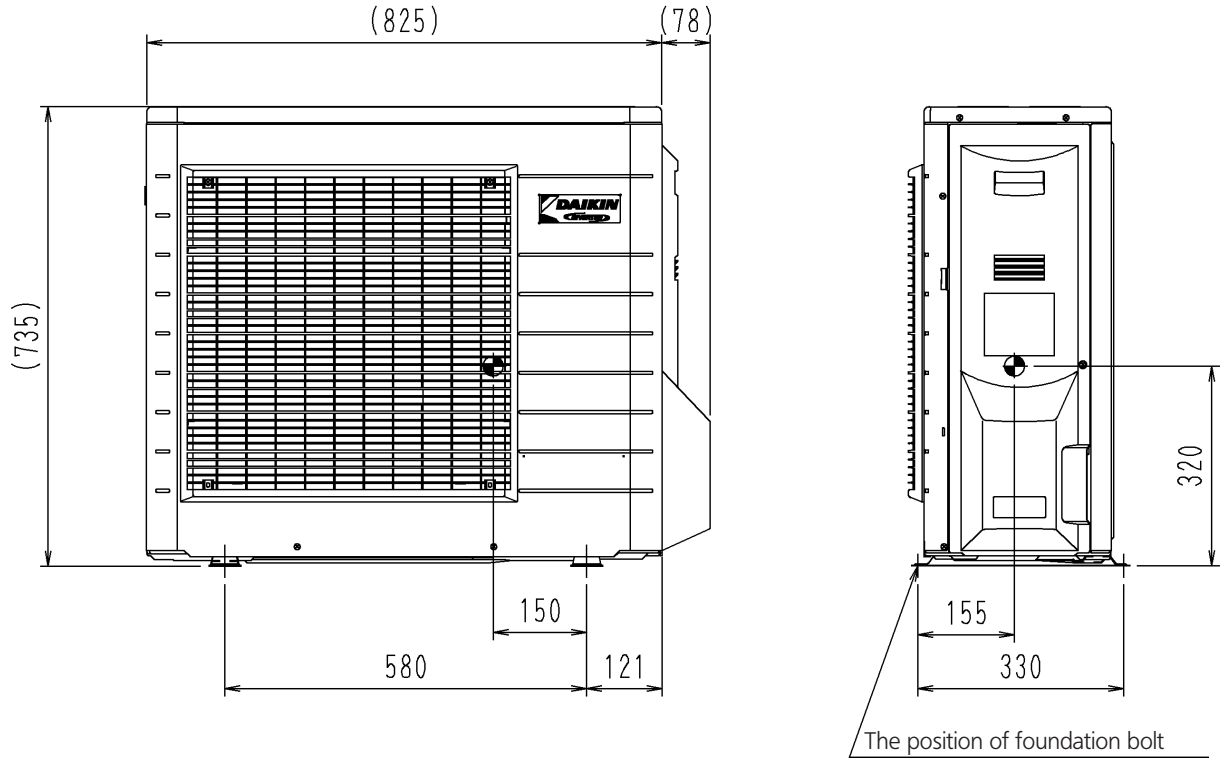
unit (mm)



4 Dimensional drawing & centre of gravity

4 - 2 Centre of gravity

ERHQ006-008 AD



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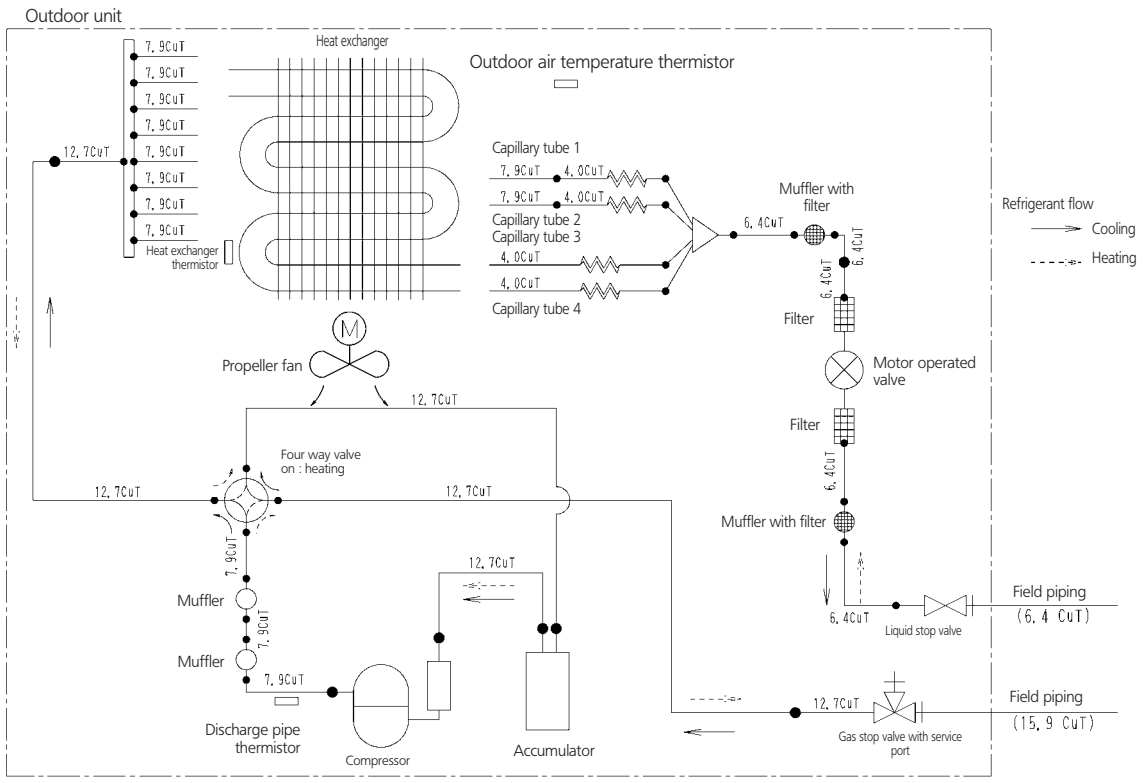
5 Piping diagram

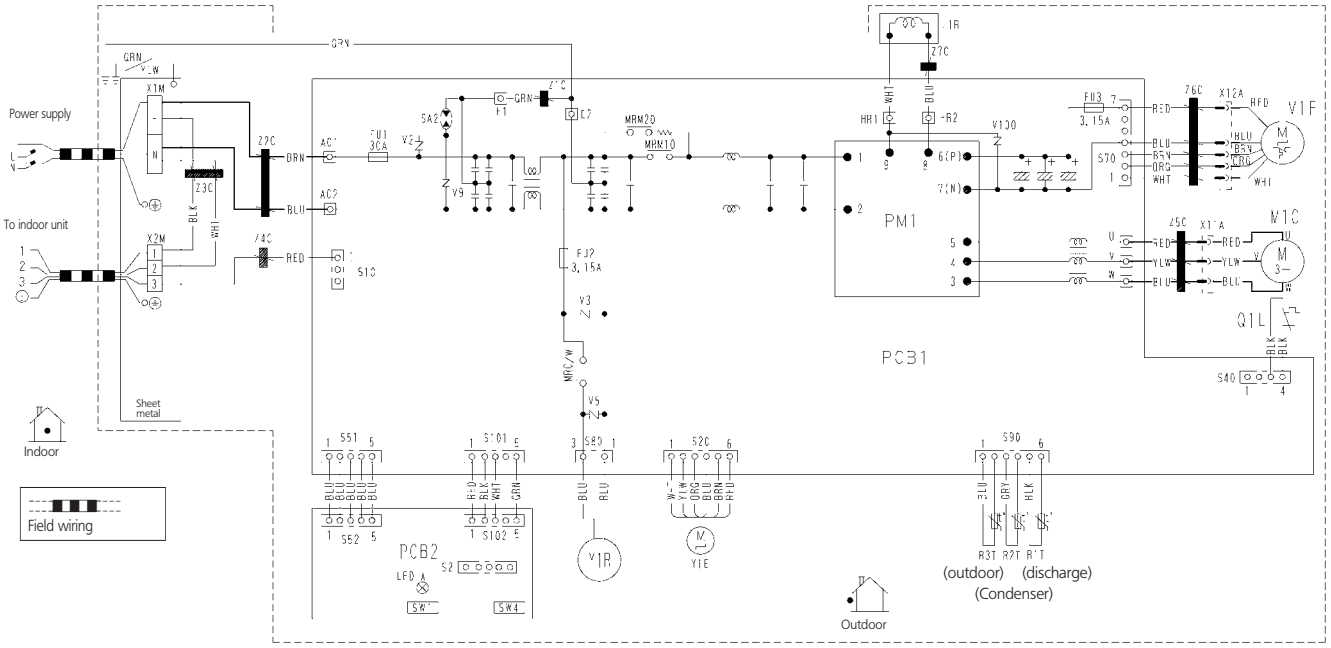
ERHQ006-008AD



6 Wiring diagram

6 - 1 Wiring diagram

ERHQ006-008AD



Z1C–Z7C	: Ferrite core	MRM10, MRM20		Q1L	: Overload protector
X1M, X2M	: Terminal strip	MRC/W	: Magnetic relay	PM1	: Power module
Y1E	: Electronic expansion valve coil	R1T–R3T	: Thermistor	PCB1,2	: Printed circuit board
V2, V3, V5, V9, V100	: Varistor	S2–S102	: Connector	Y1R	: Reversing solenoide valve coil
SA2	: Surge arrester	LEDA	: Pilot lamp	Sheet metal	: Terminal strip fixed plate
FU1, FU2, FU3:	: Fuse	L	: Live		
AC1, AC2		N	: Neutral		
U, V, W, X11A, X12A		SW1	: Forced operation on/off switch SW (SW1)		
E1, E2		SW4	: Local setting SW (SW4)		
HR1, HR2	: Connector	M1C	: Compressor motors		
		M1F	: Fan motor		
		L1R	: Reactor		

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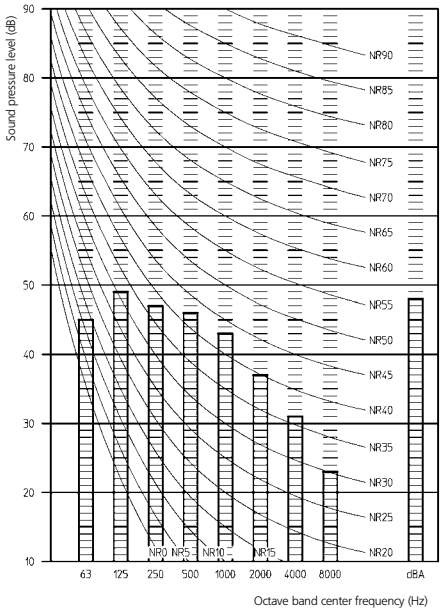
7 Sound data

7 - 1 Sound pressure spectrum

ERHQ006AA HEATING



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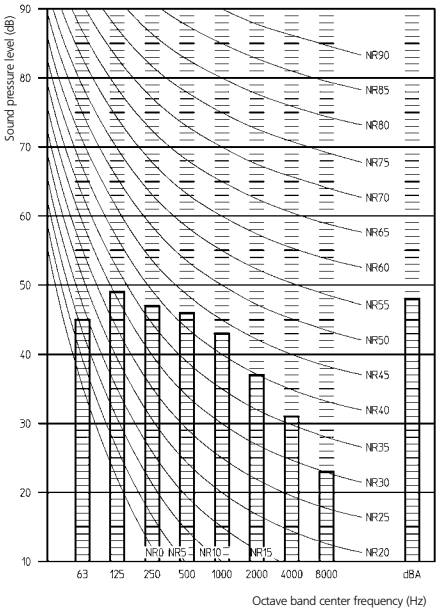
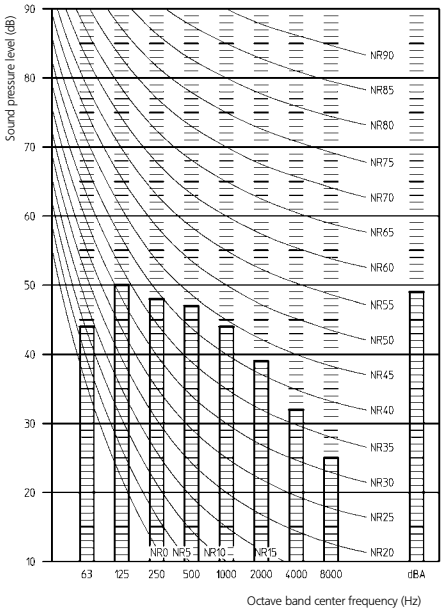
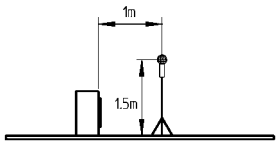


ERHQ008AA HEATING



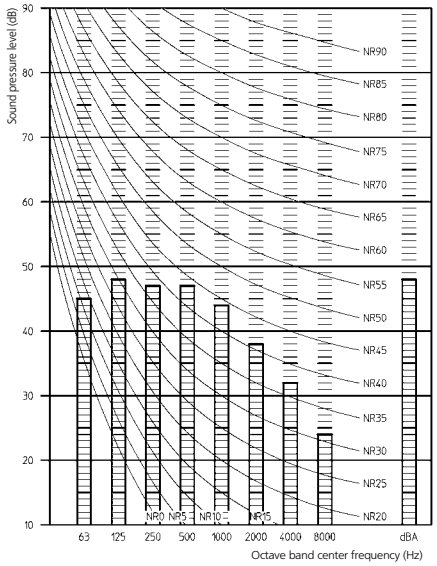
Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

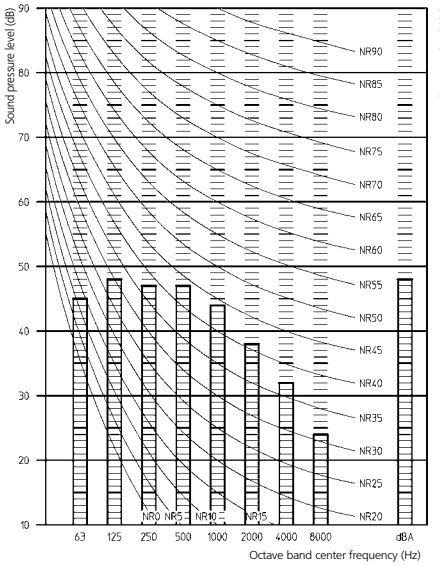


Measuring location (discharge side)

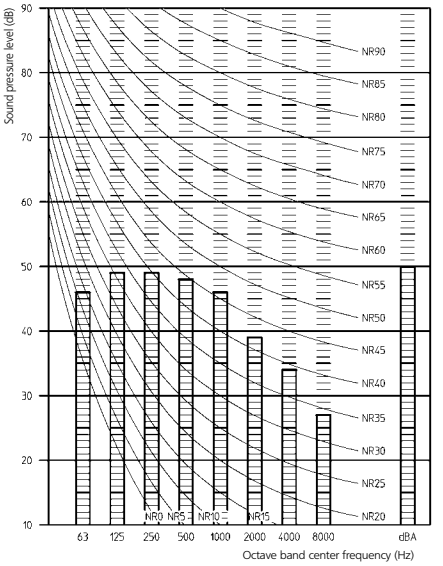
ERHQ006AA COOLING



ERHQ007AA COOLING



ERHQ008AA COOLING



Notes:

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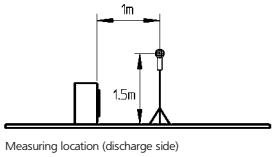


Measuring location (discharge side)

3TW57557-1A

TABLE OF CONTENTS

EKHBH-X008AA

1 Features

- Small capacity indoor unit
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHBH008AA	EKHBX0008AA
Outdoor units				ERHQ008ADV3	
Nominal input (Indoor only)			W	230	230
Casing	Colour			RAL9010	
	Material			Epoxy polyester painted galvanised steel	
Dimensions	Packing	Height	mm	1,225	
		Width	mm	660	660
		Depth	mm	610	610
	Unit	Height	mm	922	922
		Width	mm	502	502
		Depth	mm	361	361
Weight	Unit		kg	52	52
	Packed Unit		kg	67	67
Packing	Material			EPS	
				Wood	
				Carton	
				PP (Straps)	
	Weight		kg	10	10
Main components	Pump	Type		Water cooled	
		Nr. of speed		3	3
Pump	Nominal ESP unit	Heating	kPa	38	38
		Cooling	kPa		48
Main components	Pump	Power input	W	130	130
	Water side Heat exchanger	Type		Brazed plate	
		Qty		1	1
		Water volume	l	0.67	0.67
		Water flow rate Min.	l/min	12	12
Water side Heat exchanger	Water flow rate Nom.	Heating	l/min	24.1	24.1
		Cooling	l/min		17.4
Main components	Water side Heat exchanger	Insulation material		Polyurethane foam	
	Expansion vessel	Volume	l	10	10
		Max. water pressure	bar	3	3
		Pre pressure	bar	1	1
	Water filter	Diameter perforations	mm	1	1
		Material		Brass	
Water circuit	Piping connections diameter		inch	G1 (MALE)	
	Piping		inch	1-1/4''	
	Safety valve		bar	3	3
	Manometer			Yes	
	Drain valve / Fill valve			Yes	
	Shut off valve			Yes	
	Air purge valve			Yes	
	Total water volume (6)		l	5.5	5.5
Refrigerant Circuit	Gas side diameter		mm	15,9	
	Liquid side diameter		mm	6,35	
Sound level	Sound Pressure		dBA	28	28
	Sound Power		dBA	42	42

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHBH008AA	EKHBX0008AA
Operation range	Ambient	Heating	°C	-20~25	
		Cooling	°C		10~43
	Waterside	Heating	°C	15~50	
		Cooling	°C		5~22

2-2 ELECTRICAL SPECIFICATIONS				EKHBH008AA	EKHBX0008AA
Electric heater	Type			3V3	
	Power Supply	Phase		1~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current	Running Current	A	13	13
Current	Z-max	List		No requirements	
	Zmax electric heater + booster heater (EKSWW* Models)	Text		0.25 + j0.15	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		3G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6V3	
	Power Supply	Phase		1~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current	Running Current	A	26	26
Current	Z-max	Text		0.25 + j0.15	
	Zmax electric heater + booster heater (EKSWW* Models)	Text		0.15 + j0.09	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		3G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6WN	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	400	400
	Current	Running Current	A	8.7	8.7
Current	Z-max	List		No requirements	
	Zmax electric heater + booster heater (EKSWW* Models)	List		No requirements	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS				EKHBH008AA	EKHBX0008AA
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6T1	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current	Running Current	A	15.1	15.1
Current	Z-max	List		Out of scope	
	Zmax electric heater + booster heater (EKSWW* Models)	List		Out of scope	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			9WN	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	400	400
	Current	Running Current	A	13	13
Current	Z-max	List		No requirements	
	Zmax electric heater + booster heater (EKSWW* Models)	List		No requirements	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			9T1	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current	Running Current	A	22.6	22.6
Current	Z-max	List		Out of scope	
	Zmax electric heater + booster heater (EKSWW* Models)	List		Out of scope	
Electric heater	Current	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12	
	Voltage range	Minimum		-10%	
		Maximum		+10%	

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS			EKHBH008AA	EKHBX0008AA
Wiring connections	For power supply backup heater	Quantity of wires	4G	
		Type of wires	Select diameter and type according to national and local regulations	
	Connection type		For power supply connection to Optional Warm Water Tank + Q2L	
	Quantity of wires		3G	
	Type of wires		Select diameter and type according to national and local regulations	
	Type of wires		(4) For more details of the voltage range and current refer to installation manual EKHBH/X008AA*	
	Connection type		For connection with R5T	
	Quantity of wires		wire included in option EKHWS*	
	Type of wires		Wire included in option EKHWS*	
	Connection type		For connection with A3P	
	Quantity of wires		Depends on thermostat type, refer to installation manual EKHB/X008AA*	
	Type of wires		Select diameter and type according to national and local regulations	
	Type of wires		Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
	Connection type		For connection with M2S	
	Quantity of wires		3G	
	Type of wires		Select diameter and type according to national and local regulations	
	Type of wires		Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
	Connection type		For connection with M3S	
	Quantity of wires		3G or 4G	
	Type of wires		Select diameter and type according to national and local regulations	
	Type of wires		Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
Notes			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	
			(*) 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 <= 75A	
			(**) System impedance	

3 Options

Factory mounted optional equipment for EKHB(H/X)008AA**

Reference	Description												
	Heating only model EKHBH008A... Reversible model EKHBX008A...	A3V3	A3V3	A6V3	A6V3	A6WN	A6WN	A6T1	A6T1	A9WN	A9WN	A9T1	A9T1
3V3	Back up heater 3kW 1~230 V	○	○	—	—	—	—	—	—	—	—	—	—
6V3	Back up heater 6kW 1~230 V	—	—	○	○	—	—	—	—	—	—	—	—
6WN	Back up heater 6kW 3~400 V	—	—	—	—	○	○	—	—	—	—	—	—
6T1	Back up heater 6kW 3~230 V	—	—	—	—	—	—	○	○	—	—	—	—
9WN	Back up heater 9kW 3~400 V	—	—	—	—	—	—	—	—	○	○	—	—
9T1	Back up heater 9kW 3~230 V	—	—	—	—	—	—	—	—	—	—	○	○

Outdoor combination table for EKHB(H/X) 008AA**

		ERHQ006ADV3(8)	ERHQ007ADV3(8)	ERHQ008ADV3(8)
EKHBH008AA*	Heating only indoor unit	○	○	○
EKHBX008AA*	Reversible indoor unit	○	○	○

Kit availability for ERHQ006-008AD*

		ERHQ006ADV3	ERHQ007ADV3	ERHQ008ADV3
EKBPHT08	Bottom plate heater (1) (3)	○	○	○
EKDK02	drain plug kit (3)	○	○	○
EKDK03	drain stop kit (3)	○	○	○

Kit availability for EKHB(H/X)008AA*

Reference	Description												
	Heating only model EKHBH008A... Reversible model EKHBX008A...	A3V3	A3V3	A6V3	A6V3	A6WN	A6WN	A6T1	A6T1	A9WN	A9WN	A9T1	A9T1
EKHWS150(A/B)3V3	Domestic hot water tank 150l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS200(A/B)3V3	Domestic hot water tank 200l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS300(A/B)3V3	Domestic hot water tank 300l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS200(A/B)3Z2	Domestic hot water tank 200l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWS300(A/B)3Z2	Domestic hot water tank 300l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWSU150(A/B)3V3	Domestic hot water tank 150l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWSU200(A/B)3V3	Domestic hot water tank 200l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWSU300(A/B)3V3	Domestic hot water tank 300l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHBDP	Option kit for condensate free cooling operation	-	○	-	○	-	○	-	○	-	○	-	○
EKRP1HB	Digital I/O PCB (2)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (4)	○	○	○	○	○	○	○	○	○	○	○	○

(*) If neutral line is available

Kit available for EKHWS*

Reference	Description												
	EKHWE(T)*3(V3/Z2) EKHWS*3(V3/Z2) EKHWSU*3V3	150A	200A	300A	150(A/B)	200(A/B)	300(A/B)	150A	200A	300A	150B	200B	300B
EKUHWA	Option kit for UK EKHWSU150-300V3	-	-	-	-	-	-	○	○	○	○	○	○
EKUHWB	Option kit 1 for UK EKHWSU150-300V3 (8)	-	-	-	-	-	-	○(6)	○(6)	○(6)	○	○	○
EKUHW2WB	Option kit 2 for UK EKHWSU150-300V3 (8)	-	-	-	-	-	-	○(6)	○(6)	○(6)	○(7)	○(7)	○(7)
EKSOLHWAV1	Solarkit (5)	○	○	○	○	○	○	○	○	○	○	○	○
EKWBSWW150	Wall bracket for EKHWS(U)150(A/B)3V3 or EKSWW150V3	○	-	-	○	-	-	○	-	-	○	-	-

Remarks: Other combinations than mentioned in this option TW are not guaranteed.
(1) Heater tape that can be fixed on the bottom plate to prevent ice formation.
(2) Address card that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included.
(3) It is not allowed to combine bottom plate heater and drain plug/stop kit
(4) EKRTETS can only be used in combination with EKRTR
(5) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.
(6) If installation on tank A version both kits are required
(7) Kit is only necessary when installing EKSOLHWAV1 on a UK tank B-series (EKHWSU(150/200/300)B3V3)
(8) EKUHWB = EKUHWA - (2 way valve and 2 way valve accessories)
EKUHW2WB = 2 way valve and 2 way valve accessories

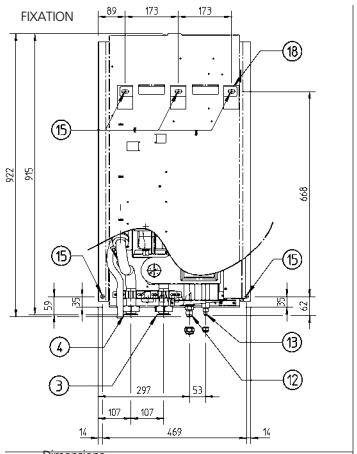
3TW57789-2G

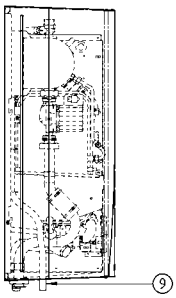
4 Dimensional drawing & centre of gravity

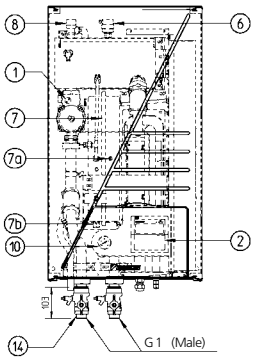
4 - 1 Dimensional drawing

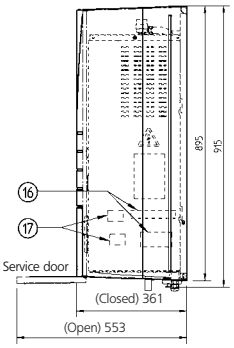
1
4

EKHBH008AA

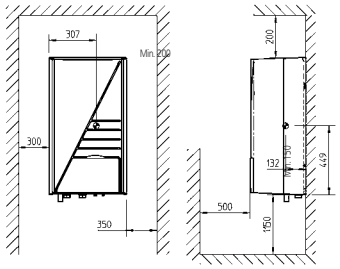




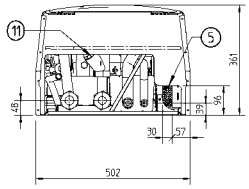


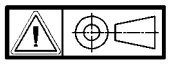


Minimum space for service & ventilation



◕ Center of gravity
① Pump + switch for speed setting
② Remocon
③ Water IN connection G 1 1/2 (female)
④ Water OUT connection G 1 1/2 (female)
⑤ Power supply intake (+ domestic hot water tank)
⑥ Air purge
⑦ Expansion vessel+⑰nipple+⑱Drain
⑧ Blow off valve
⑨ Blow off drain (flexible hose Φ20)
⑩ Pressure gauge
⑪ Water filter
⑫ Suction pipe connection Φ15.9 flare connection
⑬ Liquid pipe connection Φ6.35 flare connection
⑭ Shut off valves with drain/fill valve (accessory delivered with unit)
⑮ Holes for fixation
⑯ Switchbox terminals
⑰ Switchbox terminals option domestic hot water tank
⑱ Wallbracket





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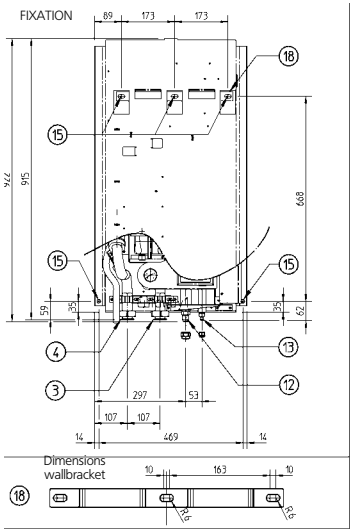
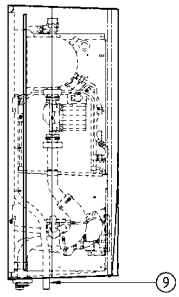
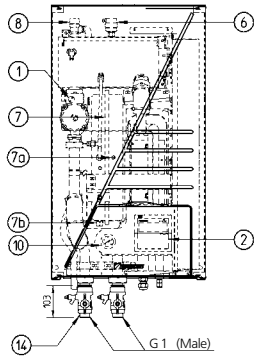
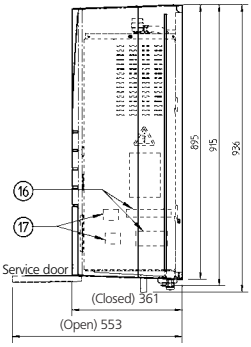
EKHBX008AA

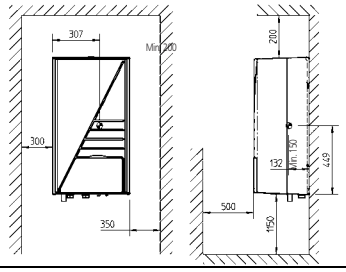




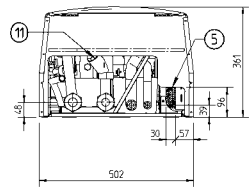


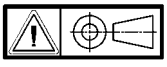


Minimum space for service & ventilation



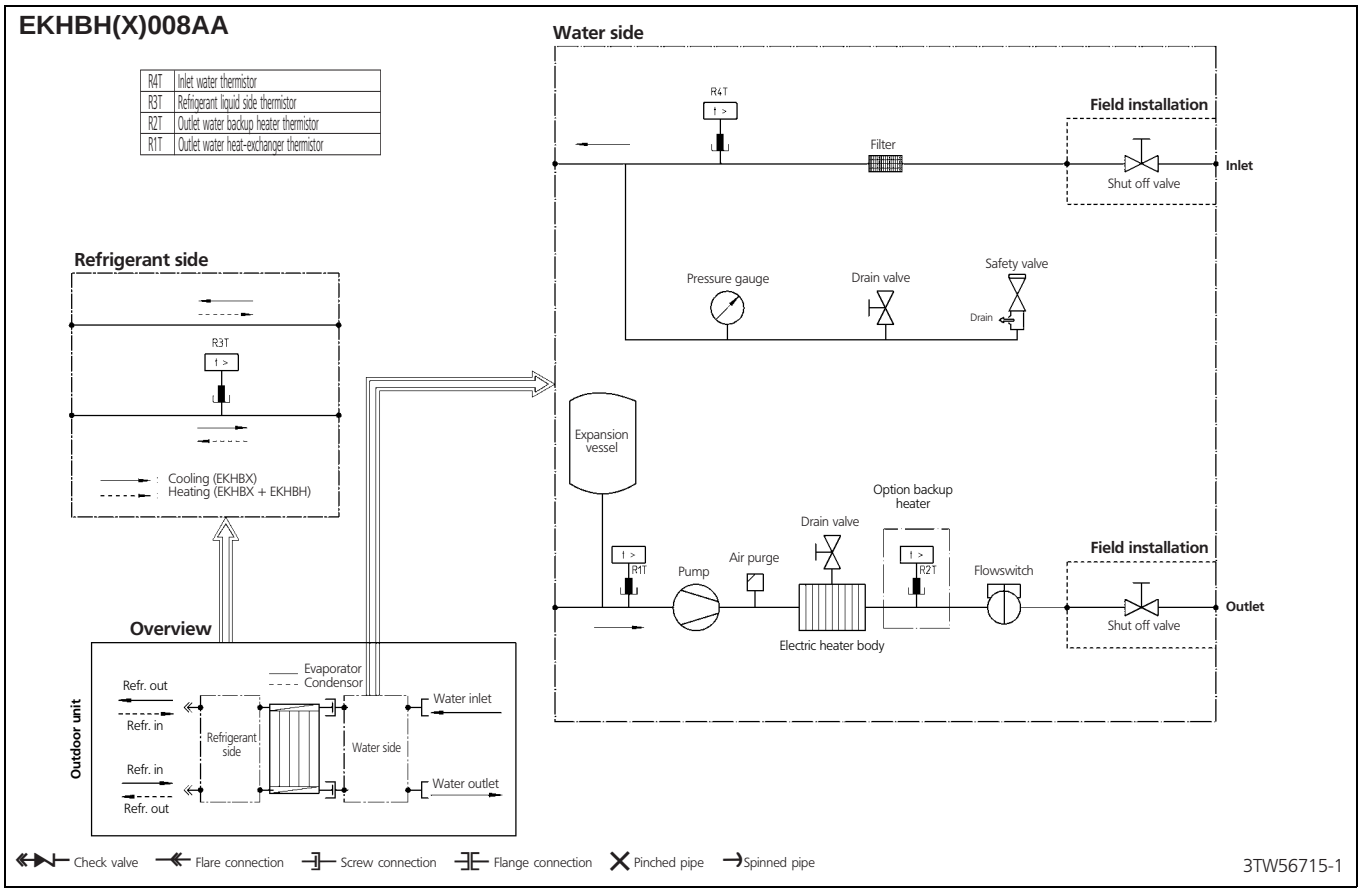
◕ Center of gravity
① Pump + switch for speed setting
② Remocon
③ Water IN connection G 1 1/2 (female)
④ Water OUT connection G 1 1/2 (female)
⑤ Power supply intake (+ domestic hot water tank)
⑥ Air purge
⑦ Expansion vessel+⑰nipple+⑱Drain
⑧ Blow off valve
⑨ Blow off drain (flexible hose Φ20)
⑩ Pressure gauge
⑪ Water filter
⑫ Suction pipe connection Φ15.9 flare connection
⑬ Liquid pipe connection Φ6.35 flare connection
⑭ Shut off valves with drain/fill valve (accessory delivered with unit)
⑮ Holes for fixation
⑯ Switchbox terminals
⑰ Switchbox terminals option domestic hot water tank
⑱ Wallbracket





3TW57784-2A

5 Piping diagram

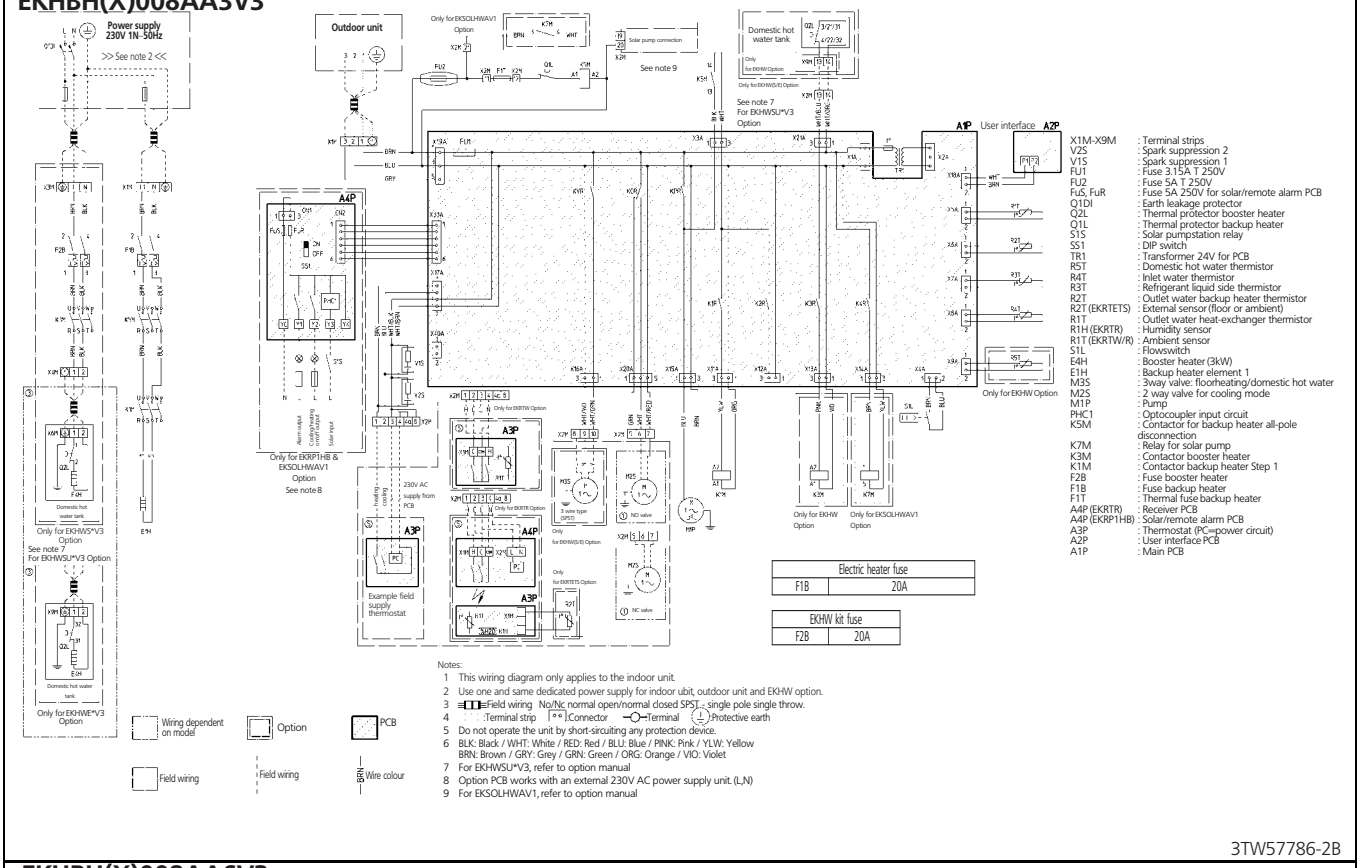


6 Wiring diagram

6 - 1 Wiring diagram

1
6

EKHBH(X)008AA3V3

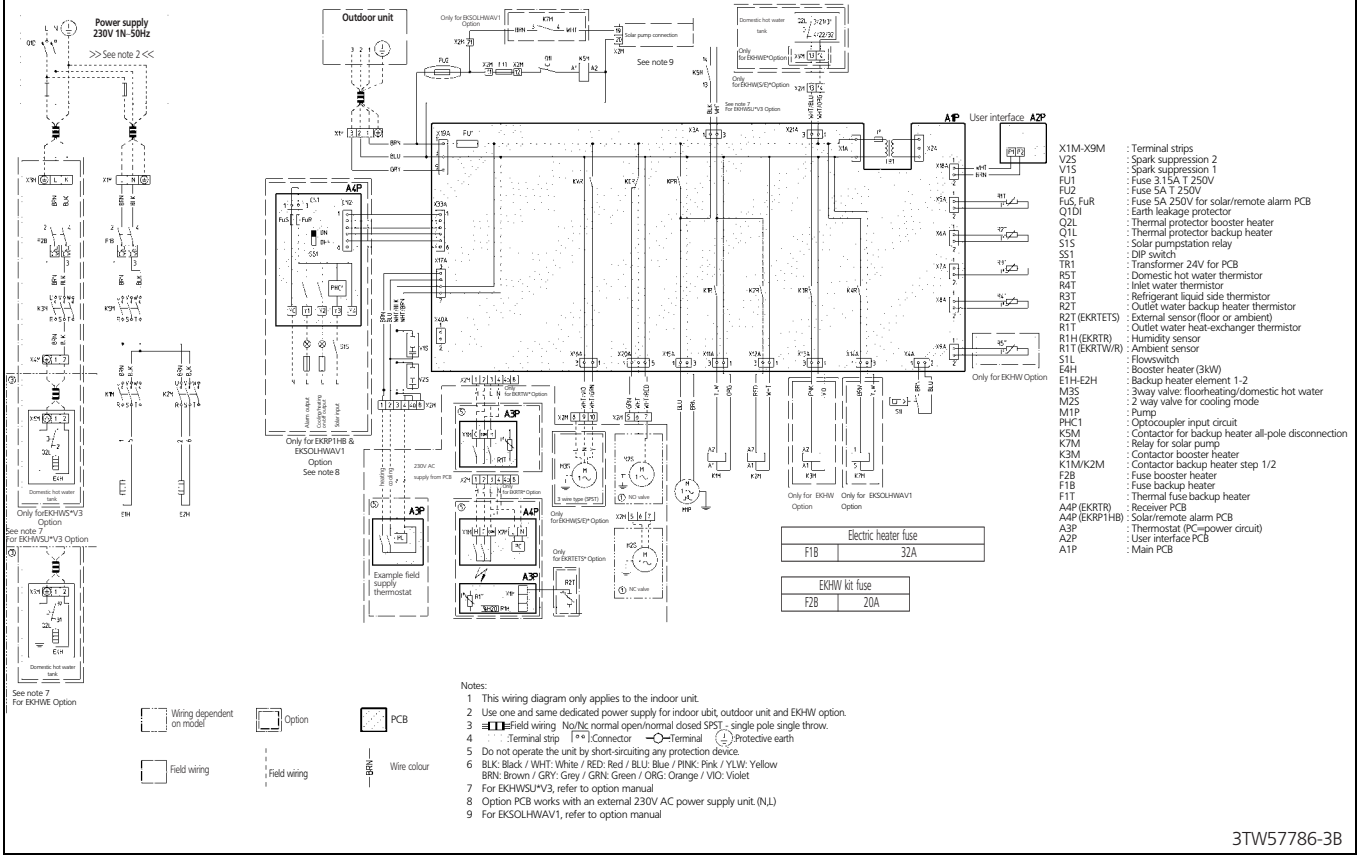


X1M-X9M : Terminal strips
V2S : Spark suppression 2
V1S : Spark suppression 1
FU1 : Fuse 3.15A T 250V
FU2 : Fuse 5A T 250V
FuS, FuR : Fuse 5A 250V for solar/remote alarm PCB
Q1DI : Earth leakage protector
Q2L : Thermal protector booster heater
Q1L : Thermal protector backup heater
S1S : Solar pumpstation relay
SS1 : DIP switch
TR1 : Transformer 24V for PCB
R5T : Domestic hot water thermistor
R4T : Inlet water thermistor
R3T : Refrigerant liquid side thermistor
R2T : Outlet water backup heater thermistor
R2T (EKRTETS) : External sensor (floor or ambient)
R1T : Outlet water heat-exchanger thermistor
R1H (EKRTR) : Humidity sensor
R1T (EKRTW/R) : Ambient sensor
S1L : Flowswitch
E4H : Booster heater (3kW)
E1H : Backup heater element 1
M3S : 3way valve: floorheating/domestic hot water
M2S : 2 way valve for cooling mode
M1P : Pump
PHC1 : Optocoupler input circuit
K5M : Contactor for backup heater all-pole disconnection
K7M : Relay for solar pump
K3M : Contactor booster heater
K1M : Contactor backup heater Step 1
F2B : Fuse booster heater
F1B : Fuse backup heater
F1T : Thermal fuse backup heater
A4P (EKRTR) : Receiver PCB
A4P (EKRP1HB) : Solar/remote alarm PCB
A3P : Thermostat (PC=power circuit)
A2P : User interface PCB
A1P : Main PCB

Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (L,N)
9 For EKSOLHWAV1, refer to option manual

3TW57786-2B

EKHBH(X)008AA6V3



X1M-X9M : Terminal strips
V2S : Spark suppression 2
V1S : Spark suppression 1
FU1 : Fuse 3.15A T 250V
FU2 : Fuse 5A T 250V
FuS, FuR : Fuse 5A 250V for solar/remote alarm PCB
Q1DI : Earth leakage protector
Q2L : Thermal protector booster heater
Q1L : Thermal protector backup heater
S1S : Solar pumpstation relay
SS1 : DIP switch
TR1 : Transformer 24V for PCB
R5T : Domestic hot water thermistor
R4T : Inlet water thermistor
R3T : Refrigerant liquid side thermistor
R2T : Outlet water backup heater thermistor
R2T (EKRTETS) : External sensor (floor or ambient)
R1T : Outlet water heat-exchanger thermistor
R1H (EKRTR) : Humidity sensor
R1T (EKRTW/R) : Ambient sensor
S1L : Flowswitch
E4H : Booster heater (3kW)
E1H-E2H : Backup heater element 1-2
M3S : 3way valve: floorheating/domestic hot water
M2S : 2 way valve for cooling mode
M1P : Pump
PHC1 : Optocoupler input circuit
K5M : Contactor for backup heater all-pole disconnection
K7M : Relay for solar pump
K3M : Contactor booster heater
K1M/K2M : Contactor backup heater step 1/2
F2B : Fuse booster heater
F1B : Fuse backup heater
F1T : Thermal fuse backup heater
A4P (EKRTR) : Receiver PCB
A4P (EKRP1HB) : Solar/remote alarm PCB
A3P : Thermostat (PC=power circuit)
A2P : User interface PCB
A1P : Main PCB

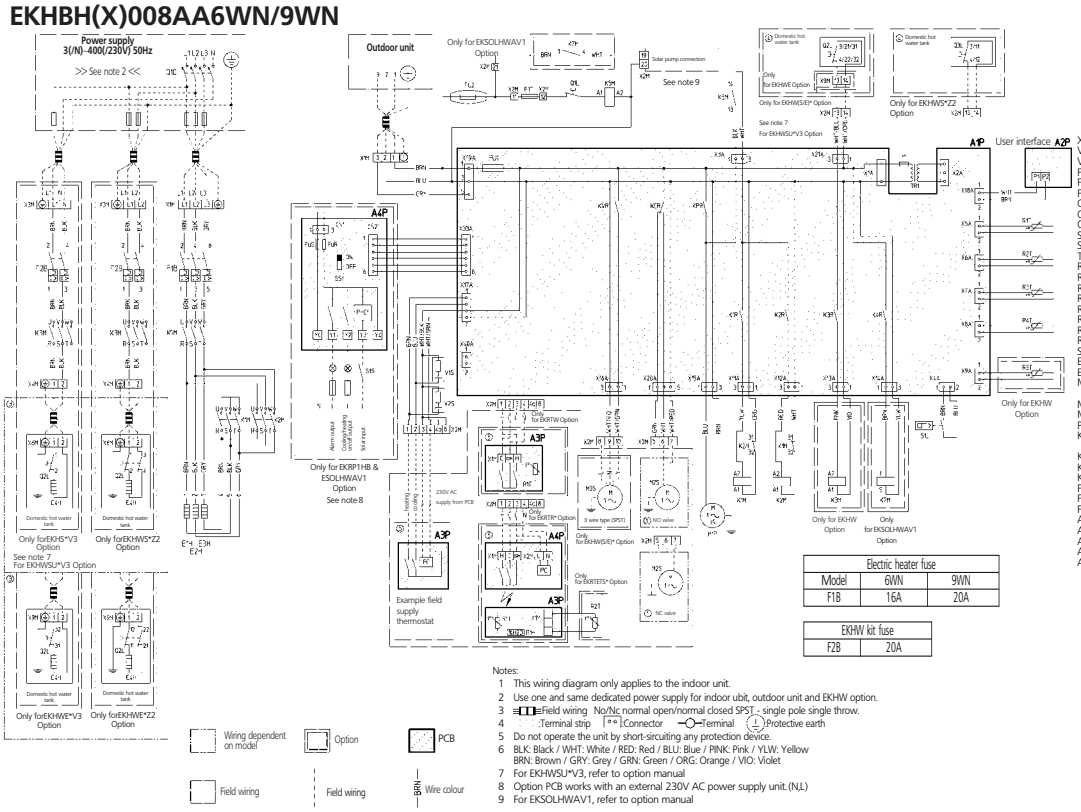
Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N,L)
9 For EKSOLHWAV1, refer to option manual

3TW57786-3B

6 Wiring diagram

6 - 1 Wiring diagram

EKHBH(X)008AA6WN/9WN



Electric heater fuse		
Model	6WN	9WN
F1B	16A	20A

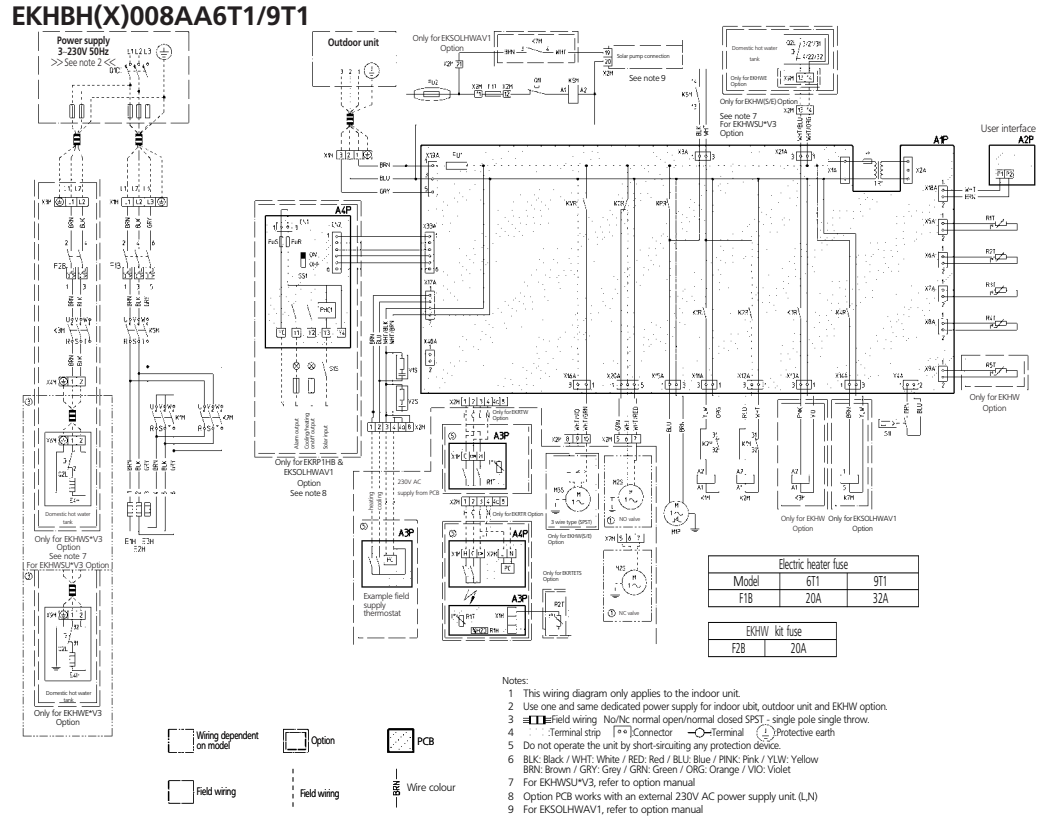
EKHW kit fuse	
F2B	20A

X1M-X9M	: Terminal strips
V2S	: Spark suppression 2
V1S	: Spark suppression 1
FU1	: Fuse 3.15A T 250V
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
Q1DI	: Earth leakage protector
Q2L	: Thermal protector booster heater
Q1L	: Thermal protector backup heater
S1S	: Solar pumpstation relay
SS1	: DIP switch
TR1	: Transformer 24V for PCB
R5T	: Domestic hot water thermistor
R4T	: Inlet water thermistor
R3T	: Refrigerant liquid side thermistor
R2T	: Outlet water backup heater thermistor
R2T (EKRTETS)	: External sensor (floor or ambient)
R1T	: Outlet water heat-exchanger thermistor
R1H (EKRTR)	: Humidity sensor
R1T (EKRTW/R)	: Ambient sensor
S1L	: Flowswitch
E4H	: Booster heater (3kW)
E1H-E3H	: Backup heater element 1-3
M3S	: 3way valve: floorheating/domestic hot water
M2S	: 2 way valve for cooling mode
M1P	: Pump
PHC1	: Optocoupler input circuit
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
K3M	: Contactor booster heater
K1M/K2M	: Contactor backup heater step 1/2
F2B	: Fuse booster heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
A4P (EKRTR)	: Receiver PCB
A4P (EKRP1HB)	: Solar/remote alarm PCB
A3P	: Thermostat (PC=power circuit)
A2P	: User interface PCB
A1P	: Main PCB

Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N,L)
9 For EKSOLHWAV1, refer to option manual

3TW57786-4B

EKHBH(X)008AA6T1/9T1



Electric heater fuse		
Model	6T1	9T1
F1B	20A	32A

EKHW kit fuse	
F2B	20A

X1M-X9M	: Terminal strips
V2S	: Spark suppression 2
V1S	: Spark suppression 1
FU1	: Fuse 3.15A T 250V
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
Q1DI	: Earth leakage protector
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Q1L	: Thermal protector backup heater
S1S	: Solar pumpstation relay
SS1	: DIP switch
R5T	: Domestic hot water thermistor
R4T	: Inlet water thermistor
R3T	: Refrigerant liquid side thermistor
R2T	: Outlet water backup heater thermistor
R2T (EKRTETS)	: External sensor (floor or ambient)
R1T	: Outlet water heat-exchanger thermistor
R1H (EKRTR)	: Humidity sensor
R1T (EKRTW/R)	: Ambient sensor
S1L	: Flowswitch
E4H	: Booster heater (3kW)
E1H-E3H	: Backup heater element 1-3
M3S	: 3way valve: floorheating/domestic hot water
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PHC1	: Optocoupler input circuit
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K3M	: Contactor booster heater
K1M/K2M	: Contactor backup heater step 1/2
F2B	: Fuse booster heater
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A4P (EKRTR)	: Receiver PCB
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A2P	: User interface PCB
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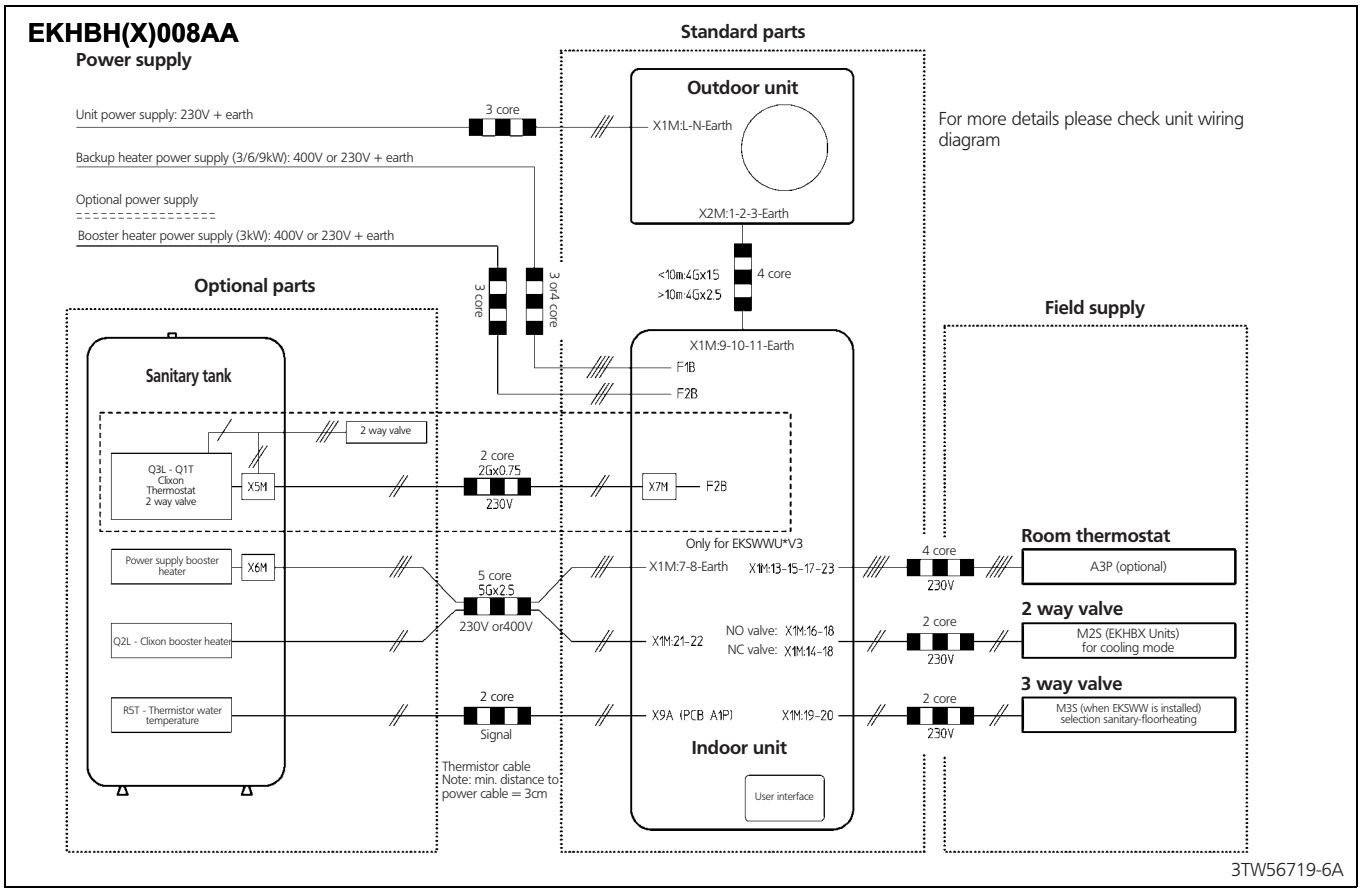
Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (L,N)
9 For EKSOLHWAV1, refer to option manual

3TW57786-6B

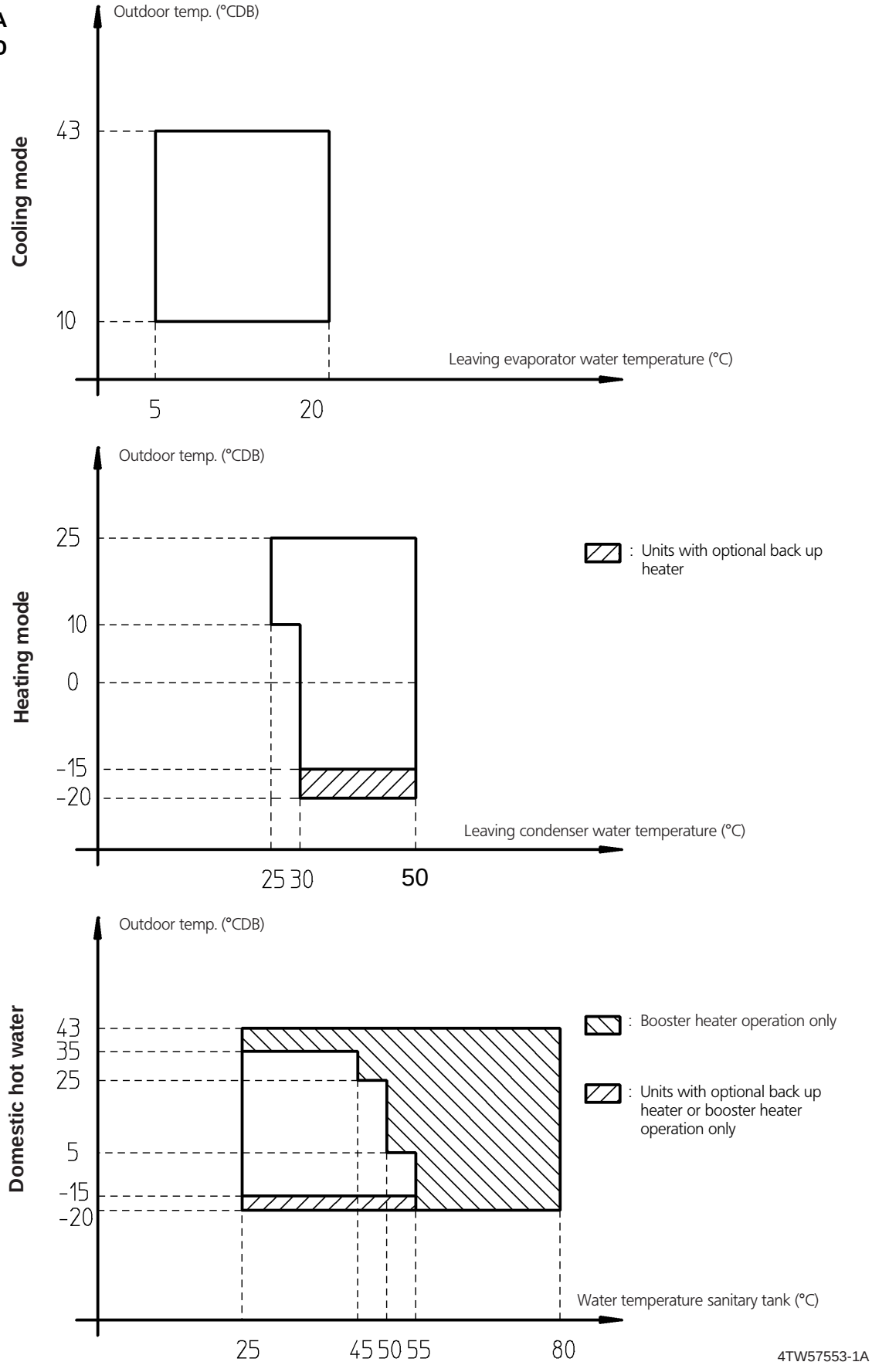
6 Wiring diagram

6 - 2 External connection diagram



7 Operation range

EKHBH(X)008AA
ERHQ006-008AD

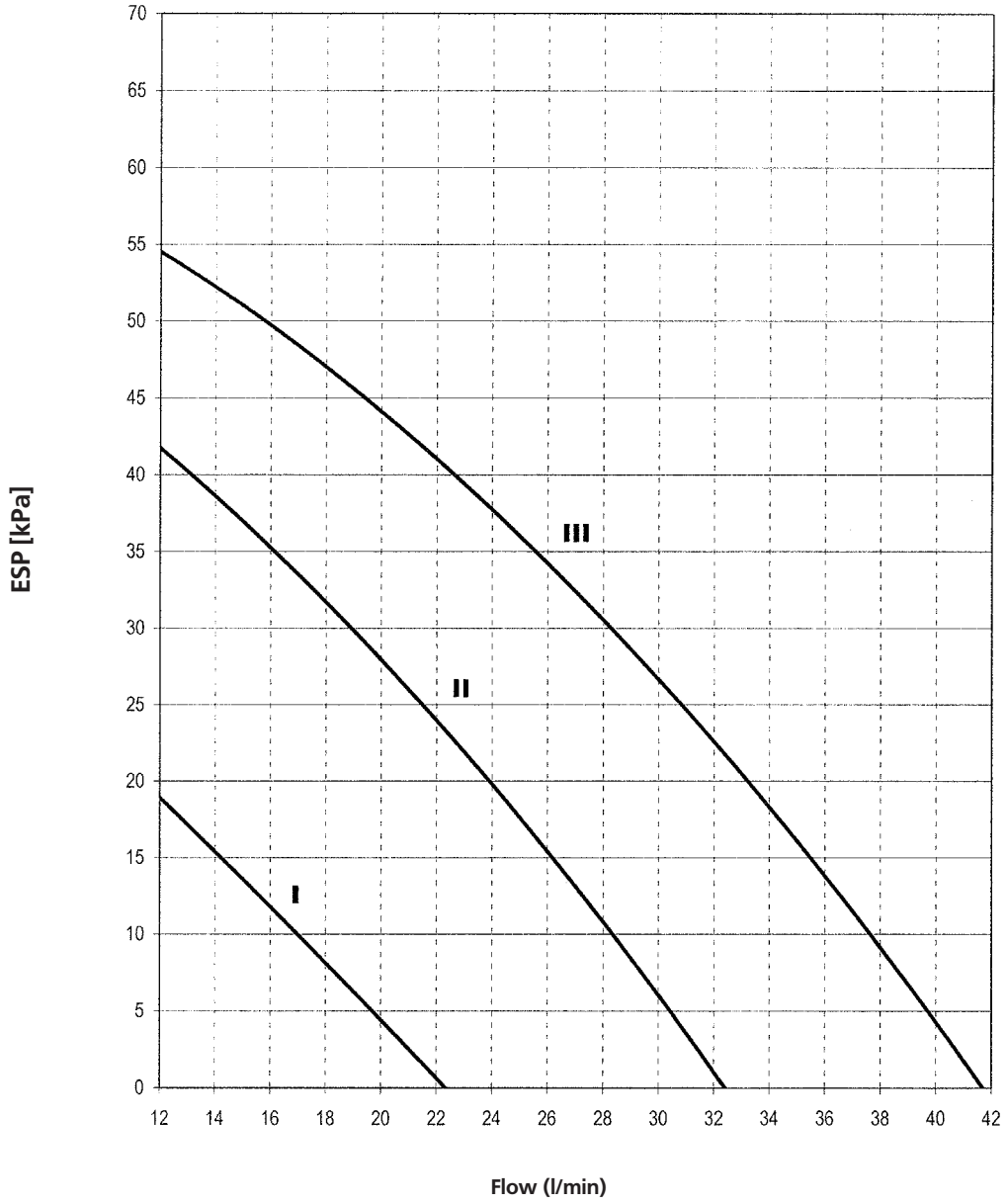


8 Hydraulic performance

8 - 1 Static pressure drop unit

1
8

EKHBH(X)008AA



III: High speed
II: medium speed
I: Low speed

ESP: External static pressure
Flow: waterflow through the unit

Warning:
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW57789-1

DAIKIN

EEDEN09-720

technical data

Altherma™

R-410A

Part 2/4:

ERHQ011-016AA

ERHQ011-016AAW1

EKHBH(X)016AB

altherma™

TABLE OF CONTENTS

ERHQ011-016AAV3

1 Features

- Single phase large capacity outdoor unit
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				ERHQ011AA	ERHQ014AA	ERHQ016AA
For combination indoor units + outdoor units	Indoor Units			EKHBH016AB		
Condition 1	Heating capacity	Nominal	kW	11.2	14.0	16.0
	Heating PI	Nominal	kW	2.46	3.17	3.83
	COP	Nominal		4.55	4.42	4.18
Nominal Capacity	Heating capacity	Nominal	kW	10.3	13.1	15.2
	Heating PI	Nominal	kW	3.06	3.88	4.66
	COP	Nominal		3.37	3.38	3.26
For combination indoor units + outdoor units	Indoor Units			EKHBX016AB		
Condition 1	Heating capacity	Nominal	kW	11.2	14.0	16.0
	Cooling capacity	Nominal	kW	13.9	17.3	17.8
	Heating PI	Nominal	kW	2.46	3.17	3.83
	Cooling PI	Nominal	kW	3.79	5.78	6.77
	COP	Nominal		4.55	4.42	4.18
	EER	Nominal		3.67	2.99	2.63
Nominal Capacity	Heating capacity	Nominal	kW	10.3	13.1	15.2
	Cooling capacity	Nominal	kW	10.0	12.5	13.1
	Heating PI	Nominal	kW	3.06	3.88	4.66
	Cooling PI	Nominal	kW	3.60	5.29	5.95
	COP	Nominal		3.37	3.38	3.26
	EER	Nominal		2.78	2.36	2.20
Notes				Condition 1: cooling Ta 35°C - LWE 18°C - heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (DT = 5°C) - heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)		

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA
Casing	Colour			Ivory white		
	Material			Painted galvanised steel plate		
Dimensions	Unit	Height	mm	1,170		
		Width	mm	900	900	900
		Depth	mm	320	320	320
	Packing	Height	mm	1,349		
		Width	mm	980	980	980
		Depth	mm	420	420	420
Weight	Unit		kg	103	103	103
	Packed Unit		kg	114	114	114
Packing	Material			EPS		
				Carton		
				Wood		
				PP (Straps)		
	Weight		kg	11	11	11

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA
Heat Exchanger	Dimensions	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin Pitch	mm	1.4	1.4	1.4
		Nr of Passes		6	6	6
		Face Area	m²	0.98	0.98	0.98
		Nr of Stages		52	52	52
	Tube type			Hi-XSS(8)		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m³/min	90	90	90
	Cooling	High	m³/min	96	100	97
Fan	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC motor		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	800	850	830
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT100G-VD		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Operation Range	Heating	Min	°CWB	-20	-20	-20
		Max	°CWB	35	35	35
	Cooling	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Sanitary water	Min	°CDB	-20	-20	-20
		Max	°CDB	43	43	43
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	49	51	53
	Cooling	Sound Power	dBA	64	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	3.7	3.7	3.7
	Control			Expansion valve(electronic type)		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA
Piping connections	Liquid (OD)	Quantity		1	1	1
		Type		Flare connection		
		Diameter (OD)	mm	9,52		
	Gas	Quantity		1	1	1
		Type		Flare connection		
		Diameter (OD)	mm	15,9		
	Drain	Quantity		3	3	3
		Type		Hole		
		Diameter (OD)	mm	26	26	26
	Piping Length	Minimum	m	5	5	5
		Maximum	m	75	75	75
		Equivalent	m	95	95	95
		Chargeless	m	30	30	30
	Additional Refrigerant Charge		kg/m	See installation manual outdoor unit 4PW37976-1B		
	Installation height difference	Maximum	m	30	30	30
	Heat Insulation			Both liquid and gas pipes		
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				Fan motor thermal protector		
				Fuse		
				High pressure switch		
Standard Accessories	Item			Tie-wraps		
	Quantity			2	2	2
	Item			Installation manual		
	Quantity			1	1	1
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Down to 3m with recharging of the outdoor unit. Refer to the installation manual of the outdoor unit.		

2-3 ELECTRICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA
Power Supply	Name			V3		
	Phase			1~		
	Frequency		Hz	50	50	50
	Voltage		V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Minimum Ssc value		kVa	Equipment complying with EN/IEC 61000-S-12 (1)		
	Maximum running Current	Cooling	A	22.8	27.4	31.9
	Recomended fuses		A	32	32	32
Wiring connections	For Power Supply	Remark		See installation manual outdoor unit 4PW37976-1B		
	For connection with indoor	Remark		See installation manual outdoor unit 4PW37976-1B		
Power Supply Intake				Outdoor unit only		
Notes				(1) European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A smaller than or equal to 75A per phase.		

3 Capacity tables

3 - 1 Heating capacity tables

Maximum Heating Capacity (Peak values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
ERHQ11	-20	5.66	2.17	5.48	2.37	5.44	2.61						
	-15	6.48	2.21	6.25	2.42	6.17	2.67						
	-7	8.04	2.24	7.74	2.46	7.63	2.72	7.50	3.02				
	-2	9.18	2.24	8.84	2.47	8.71	2.74	8.57	3.05	8.18	3.36		
	2	10.2	2.23	9.81	2.47	9.68	2.74	9.52	3.06	9.10	3.38	8.72	3.77
	7	11.6	2.21	11.2	2.46	10.8	2.74	10.3	3.06	9.94	3.42	9.53	3.82
	12	13.1	2.18	12.7	2.43	12.2	2.72	11.8	3.04	11.3	3.41	10.9	3.81
	15	14.1	2.15	13.6	2.41	13.2	2.70	12.7	3.03	12.2	3.40	11.7	3.81
	20	15.9	2.10	15.4	2.36	14.9	2.65	14.4	2.99	13.8	3.37	13.3	3.78
ERHQ14	-20	7.24	2.72	7.14	2.97	7.05	3.26						
	-15	8.19	2.78	8.01	3.04	7.85	3.34						
	-7	10.1	2.84	9.78	3.11	9.51	3.43	9.25	3.79				
	-2	11.5	2.87	11.1	3.14	11.1	3.47	10.7	3.74	10.4	4.14		
	2	12.7	2.87	12.3	3.16	12.2	3.48	11.8	3.76	11.4	4.17	11.1	4.62
	7	14.4	2.88	14.0	3.17	13.5	3.50	13.1	3.88	12.7	4.30	12.3	4.77
	12	16.3	2.86	15.9	3.16	15.4	3.50	14.9	3.89	14.4	4.32	13.9	4.79
	15	17.6	2.85	17.1	3.15	16.5	3.50	16.0	3.89	15.5	4.32	15.0	4.80
	20	19.9	2.82	19.3	3.13	18.7	3.48	18.1	3.87	17.5	4.31	17.0	4.80
ERHQ16	-20	8.35	3.25	8.31	3.54	8.27	3.89						
	-15	9.38	3.33	9.33	3.63	9.28	3.98						
	-7	11.5	3.42	11.3	3.73	11.1	4.10	10.9	4.52				
	-2	13.0	3.46	12.7	3.78	12.5	4.15	12.2	4.58	12.0	5.06		
	2	14.4	3.48	14.1	3.81	13.8	4.19	13.5	4.62	13.1	5.11	11.9	5.35
	7	16.3	3.50	16.0	3.83	15.6	4.22	15.2	4.66	14.8	5.15	13.4	5.40
	12	18.5	3.51	18.1	3.85	17.6	4.24	17.2	4.69	16.7	5.18	15.1	5.44
	15	20.0	3.51	19.5	3.86	19.0	4.25	18.5	4.69	18.0	5.20	16.6	5.75
	20	22.5	3.50	22.0	3.85	21.4	4.25	20.8	4.70	20.3	5.21	18.7	5.77

Maximum Heating Capacity (integrated values*)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
ERHQ11	-20	5.04	2.17	4.88	2.37	4.84	2.61						
	-15	5.77	2.21	5.56	2.42	5.49	2.67						
	-7	6.89	2.24	6.63	2.46	6.54	2.72	6.43	3.02				
	-2	7.43	2.11	7.16	2.33	7.06	2.58	6.94	2.87	6.63	3.17		
	2	8.16	2.16	7.86	2.39	7.75	2.65	7.63	2.96	7.29	3.26	6.99	3.64
	7	11.6	2.21	11.2	2.46	10.8	2.74	10.3	3.06	9.94	3.42	9.53	3.82
	12	13.1	2.18	12.7	2.43	12.2	2.72	11.8	3.04	11.3	3.41	10.9	3.81
	15	14.1	2.15	13.6	2.41	13.2	2.70	12.7	3.03	12.2	3.40	11.7	3.81
	20	15.9	2.10	15.4	2.36	14.9	2.65	14.4	2.99	13.8	3.37	13.3	3.78
ERHQ14	-20	6.45	2.72	6.35	2.97	6.28	3.26						
	-15	7.29	2.78	7.13	3.04	6.99	3.34						
	-7	8.06	2.84	7.84	3.11	7.62	3.43	7.42	3.79				
	-2	9.27	2.70	9.00	2.96	8.95	3.26	8.65	3.52	8.38	3.90		
	2	10.0	2.78	9.71	3.05	9.65	3.37	9.32	3.64	9.02	4.03	8.73	4.47
	7	14.4	2.88	14.0	3.17	13.5	3.50	13.1	3.88	12.7	4.30	12.3	4.77
	12	16.3	2.86	15.9	3.16	15.4	3.50	14.9	3.89	14.4	4.32	13.9	4.79
	15	17.6	2.85	17.1	3.15	16.5	3.50	16.0	3.89	15.5	4.32	15.0	4.80
	20	19.9	2.82	19.3	3.13	18.7	3.48	18.1	3.87	17.5	4.31	17.0	4.80
ERHQ16	-20	7.44	3.25	7.39	3.54	7.36	3.86						
	-15	8.35	3.33	8.30	3.63	8.26	3.98						
	-7	8.91	3.34	8.77	3.64	8.63	4.00	8.49	4.41				
	-2	10.5	3.26	10.3	3.56	10.1	3.91	9.91	4.31	9.71	4.77		
	2	11.1	3.15	10.9	3.45	10.6	3.79	10.4	4.18	10.2	4.62	9.19	4.84
	7	16.3	3.50	16.0	3.83	15.6	4.22	15.2	4.66	14.8	5.15	13.4	5.40
	12	18.5	3.51	18.1	3.85	17.6	4.24	17.2	4.69	16.7	5.18	15.1	5.44
	15	20.0	3.51	19.5	3.86	19.0	4.25	18.5	4.69	18.0	5.20	16.6	5.75
	20	22.5	3.50	22.0	3.85	21.4	4.25	20.8	4.70	20.3	5.21	18.7	5.77

3TW57752-1B

Symbols

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

Note

1 For the optional model with heatertape (V38) when ambient temperature becomes lower than 4°C: add power input of 95W

Conditions

1 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

2 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).

3 Capacity tables

3 - 2 Cooling capacity tables

Maximum Cooling Capacity

	Tamb (°C)	20		25		30		35		40		45	
	LWE (°C)	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
ERHQ11	7	11.7	2.56	11.2	2.86	10.6	3.21	10.0	3.60	9.39	4.03	8.75	4.50
	10	12.9	2.58	12.3	2.89	11.6	3.25	11.0	3.65	10.3	4.09	9.65	4.58
	13	14.1	2.59	13.4	2.92	12.8	3.29	12.1	3.70	11.3	4.15	10.6	4.65
	15	14.9	2.60	14.2	2.93	13.5	3.31	12.8	3.73	12.0	4.20	11.3	4.70
	18	16.2	2.61	15.5	2.96	14.7	3.35	13.9	3.79	13.1	4.26	12.3	4.78
	22	18.0	2.62	17.2	2.99	16.4	3.40	15.5	3.86	14.7	4.35	13.3	3.93
ERHQ14	7	14.5	3.85	13.9	4.27	13.2	4.75	12.5	5.29	11.7	5.90	11.1	5.92
	10	16.0	3.94	15.3	4.37	14.6	4.86	13.7	5.42	12.9	6.04	11.2	5.46
	13	17.6	4.02	16.8	4.47	15.9	4.98	15.0	5.55	14.1	6.18	11.9	5.04
	15	18.6	4.08	17.8	4.54	16.9	5.06	15.9	5.64	14.9	6.28	12.2	4.79
	18	20.2	4.17	19.3	4.65	18.4	5.18	17.3	5.78	16.2	6.44	12.9	4.42
	22	22.5	4.29	21.5	4.80	20.4	5.36	19.3	5.98	17.0	5.33	13.3	3.93
ERHQ16	7	15.3	4.37	14.7	4.84	13.9	5.37	13.1	5.95	12.2	6.59	11.1	5.92
	10	16.9	4.48	16.2	4.97	15.3	5.51	14.4	6.11	13.3	6.75	11.2	5.46
	13	18.5	4.60	17.7	5.10	16.7	5.66	15.7	6.27	14.6	6.93	11.9	5.04
	15	19.6	4.68	18.7	5.19	17.7	5.76	16.6	6.38	15.4	7.04	12.2	4.79
	18	21.0	4.97	20.0	5.52	18.9	6.12	17.8	6.77	16.4	6.69	12.9	4.42
	22	23.3	5.21	22.2	5.79	21.0	6.42	19.7	7.10	17.0	5.33	13.3	3.93

3TW57752-1B

Symbols

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

Note

1 For the optional model with heatertape (V38) when ambient temperature becomes lower than 4°C: add power input of 95W

Conditions

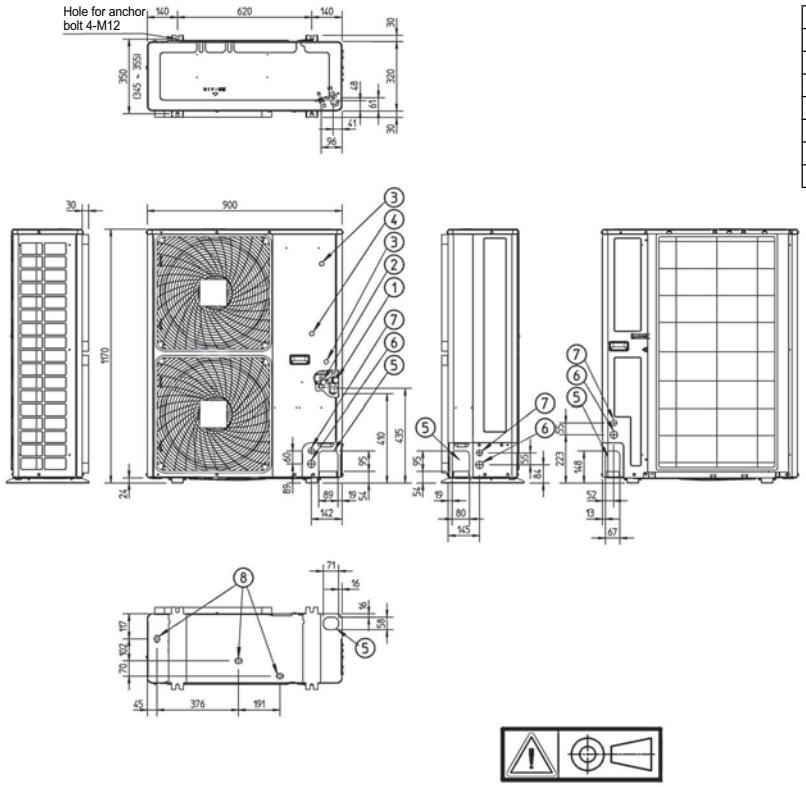
1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

2 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).

4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

ERHQ011-016



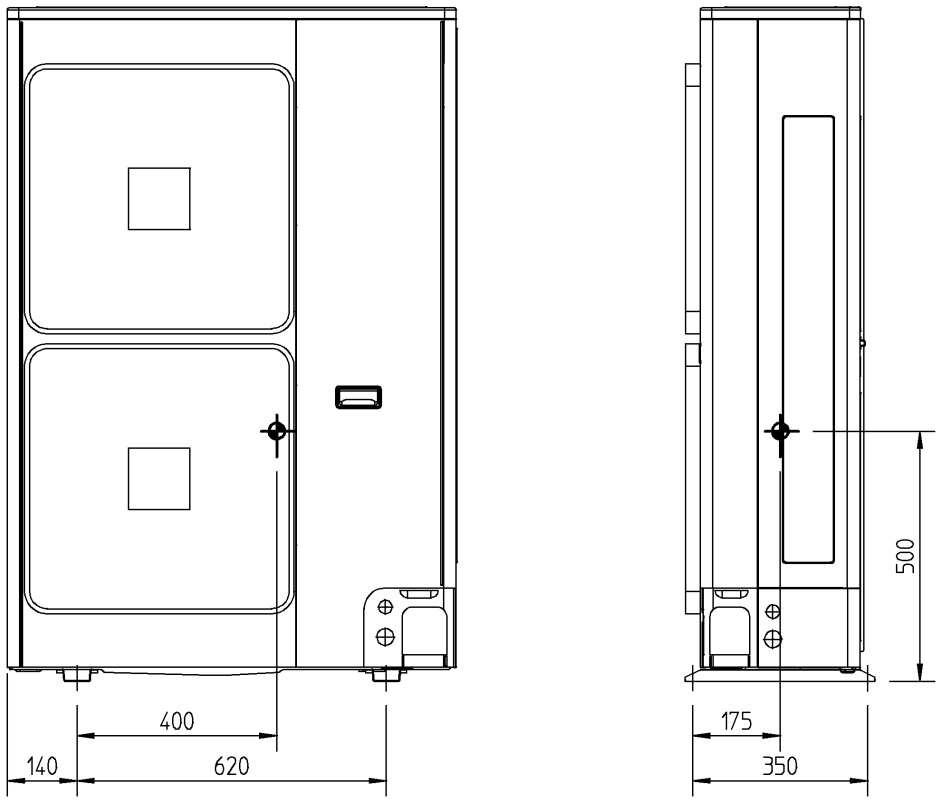
1	Gas pipe connection ∅15.9 flare
2	Liquid pipe connection ∅9.5 flare
3	Service port (in the unit)
4	Grounding terminal M5 (in switch box)
5	Refrigerant piping intake
6	Power supply wiring intake (knock out hole ∅34)
7	control wiring intake (knock out hole ∅27)
8	Drain outlet

3TW57764-1

4 Dimensional drawing & centre of gravity

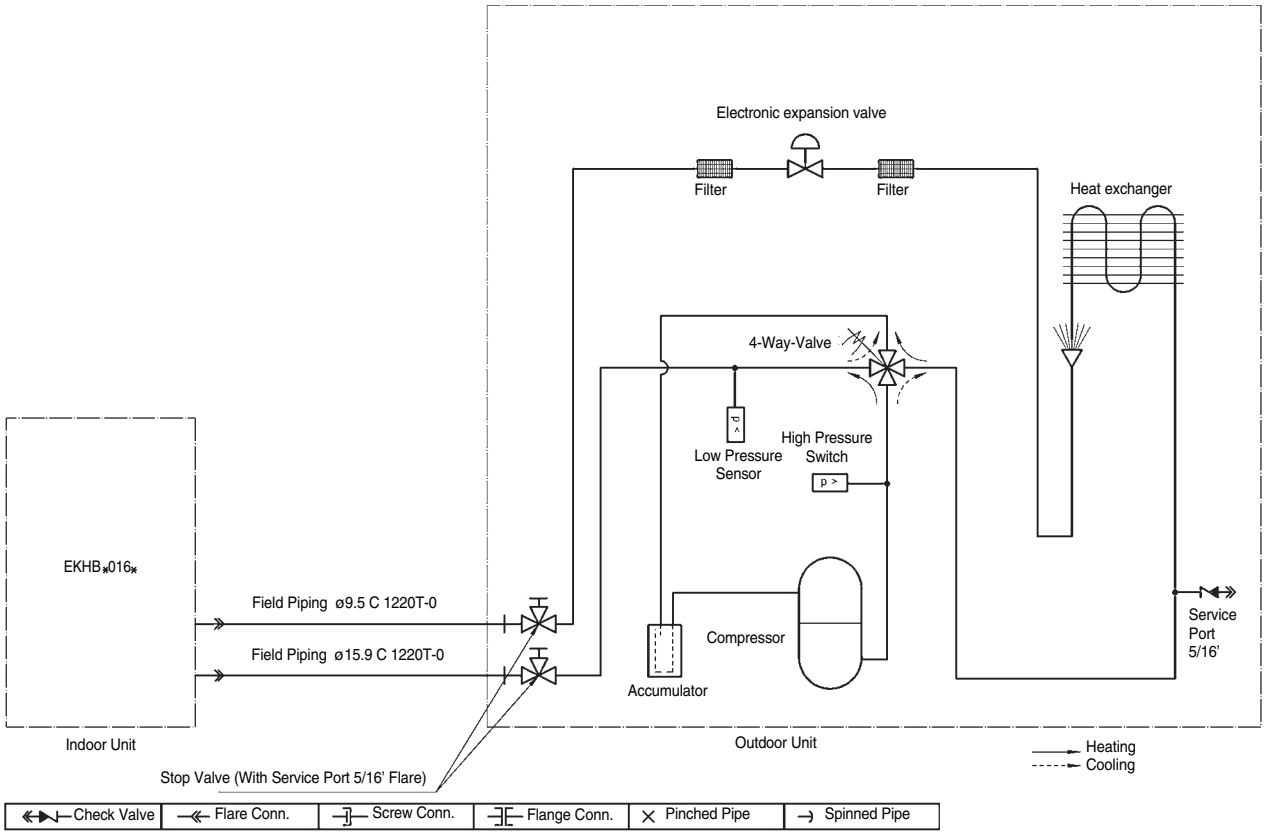
4 - 2 Centre of gravity

ERHQ011-016



5 Piping diagram

ERHQ011-016AAV3

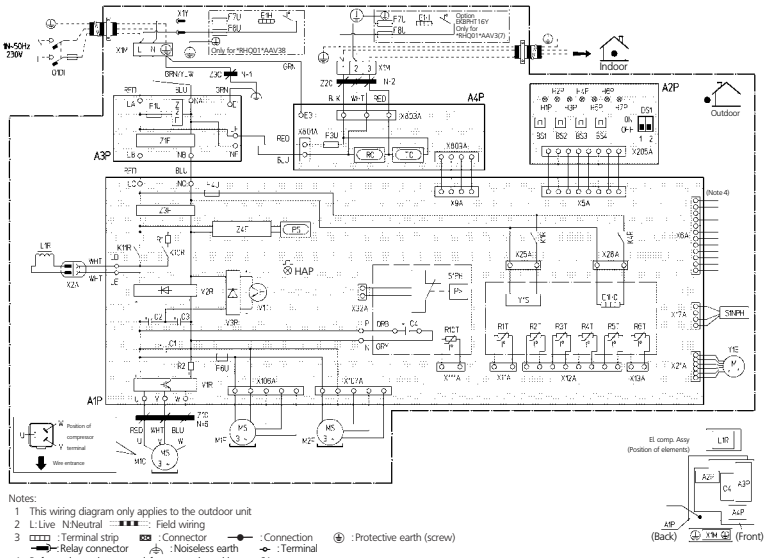


3TW57765-1

6 Wiring diagram

6 - 1 Wiring diagram

ERHQ011-016AAV3



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
A4P	Printed circuit board
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1H	Electrical heatertape (fuse: 5A/250V)
E1HC	Crankcase heater
F1U, F3U, F4U	Fuse (T 6.3A/250V)
F6U	Fuse (T 5.0A/250V)
H1P–7P (A2P)	Light emitting diode (service monitor green)
HAP (A1P)	Light emitting diode (service monitor green)
K1R	Magnetic relay (Y1S)
K4R	Magnetic relay (E1HC)
K10R	Magnetic relay
K11R	Magnetic relay
L1R	Reactor
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Field earth leakage breaker (300mA)
R1	Resistor
R2	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
RC	Signal receiver circuit
R10T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
TC	Signal transmission circuit
V1R	Power module
V2R, V3R	Diode module
V1T	IGBT
X1M	Terminal strip for power source
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Z1C–Z3C	Noise filter (ferrity core)
Z1F–Z4F	Noise filter
Optional Connector	
X1Y	Connector

Notes:
1 This wiring diagram only applies to the outdoor unit
2 L: Live N: Neutral : Field wiring
3 : Terminal strip : Connector : Connection : Protective earth (screw)
Relay connector : Noiseless earth : Terminal
4 Refer to the option manual, for connecting wiring to x6A.
5 Refer to the "Wiring diagram sticker" (on back of front plate) on how to use BS1– BS4 and DS1 switch.
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches by service. When the unit is shipped by factory all switches are set to be off.
9

Option

Wiring dependent on model

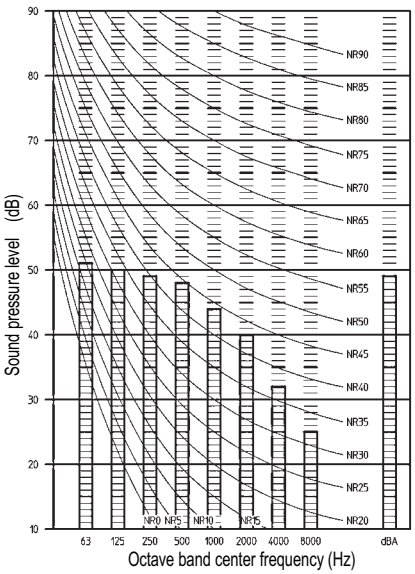
2TW57986-1A

7 Sound data

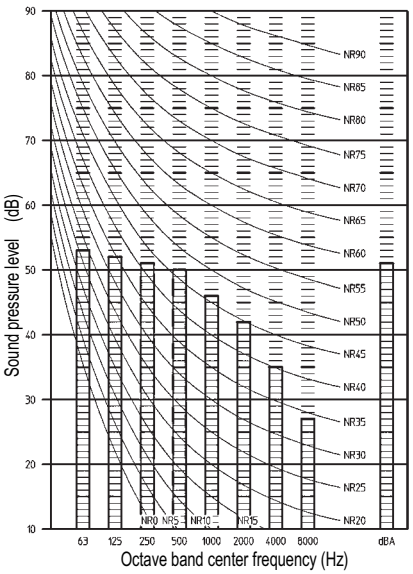
7 - 1 Sound pressure spectrum

ERHQ011-016

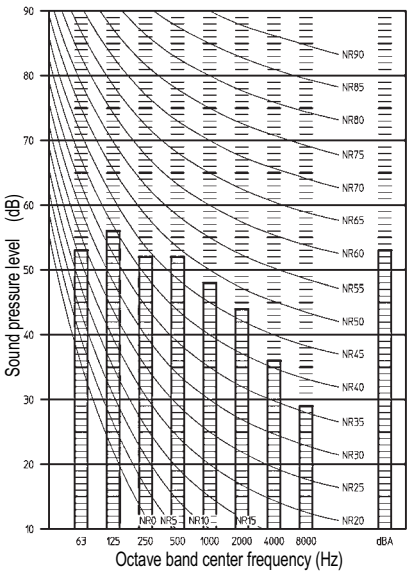
ERHQ011AAV3 HEATING



ERHQ014AAV3 HEATING



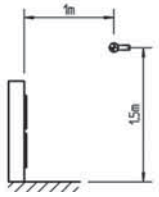
ERHQ016AAV3 HEATING



3TW57767-2A

NOTES

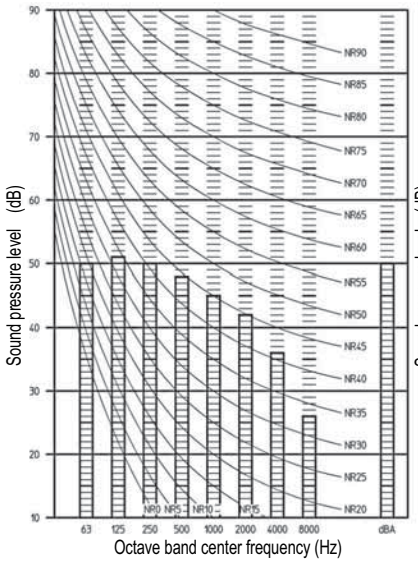
1 Data is valid at free field condition (measured in a semi-anachoic room).
2 dBA = A-Weighted sound pressure level. (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa.
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



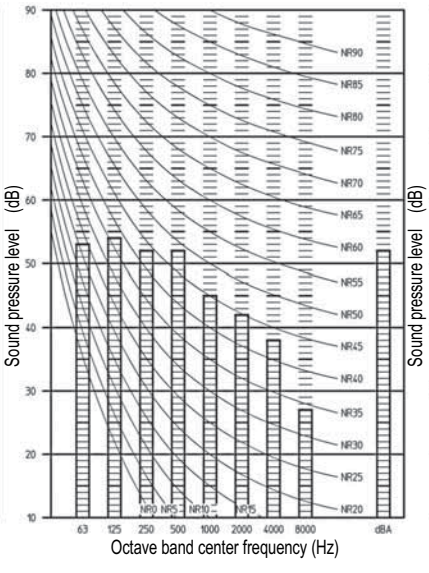
Measuring location (Discharge side)

ERHQ011-016

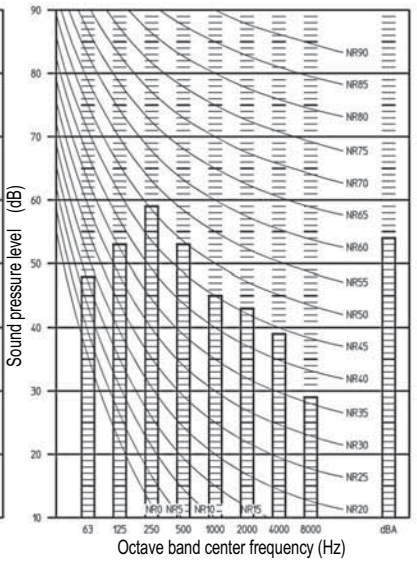
ERHQ011AAV3 COOLING



ERHQ014AAV3 COOLING



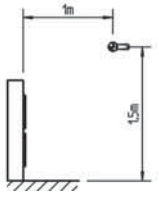
ERHQ016AAV3 COOLING



3TW57767-1A

NOTES

1 Data is valid at free field condition (measured in a semi-anachoic room).
2 dBA = A-Weighted sound pressure level. (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa.
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

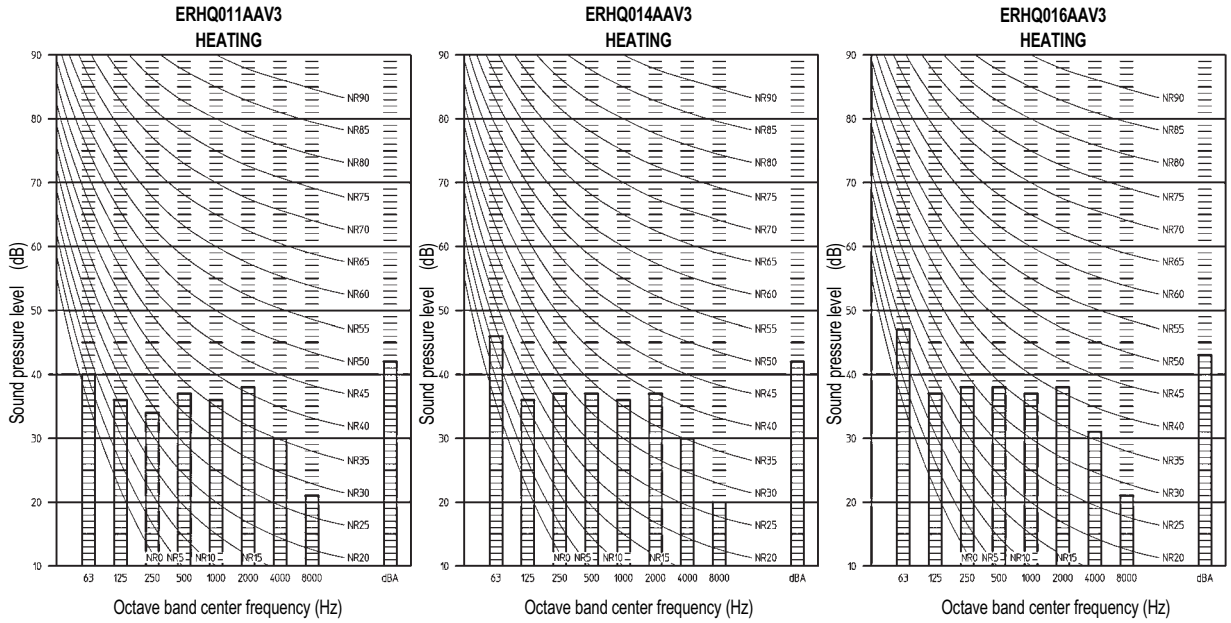


Measuring location (Discharge side)

7 Sound data

7 - 2 Sound pressure night quiet mode

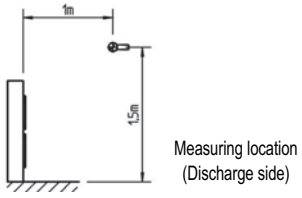
ERHQ011-016



3TW57767-4

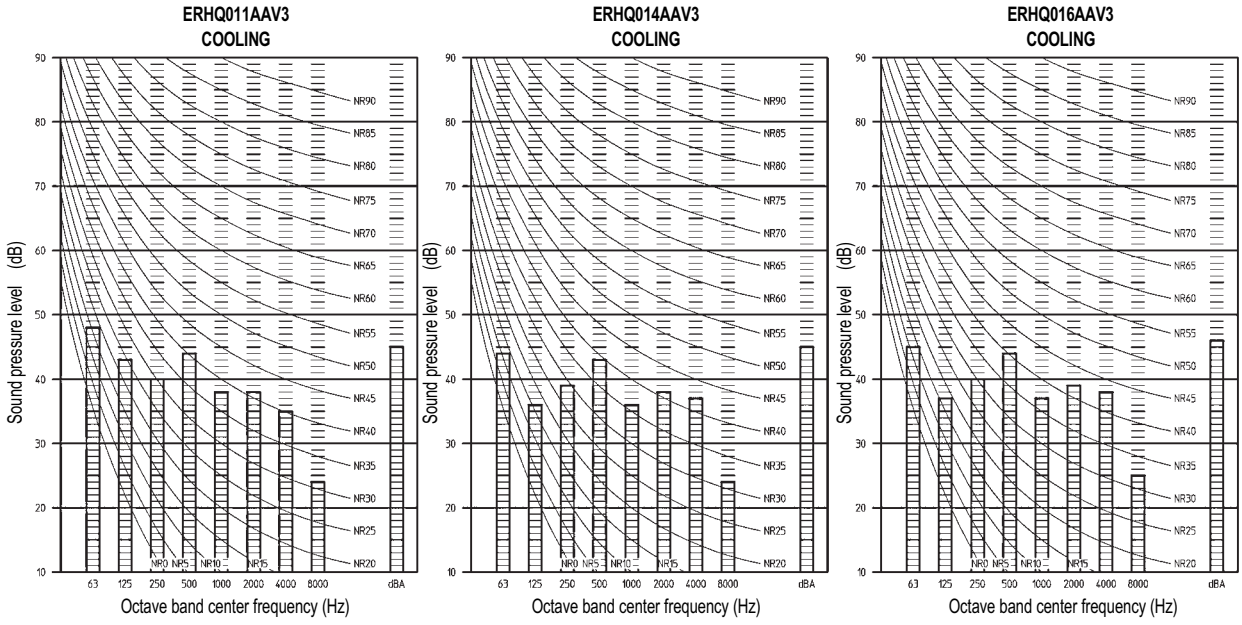
NOTES

1 Data is valid at free field condition (measured in a semi-anachoic room).
2 dBA = A-Weighted sound pressure level. (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa.
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (Discharge side)

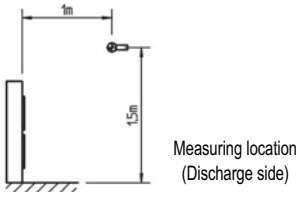
ERHQ011-016



3TW57767-3

NOTES

1 Data is valid at free field condition (measured in a semi-anachoic room).
2 dBA = A-Weighted sound pressure level. (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa.
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



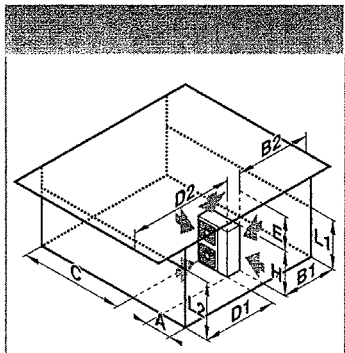
Measuring location (Discharge side)

8 Installation

8 - 1 Service space

ERHQ011-016

A. Non stacked installation



								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓				✓	L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓				✓					≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓				✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							

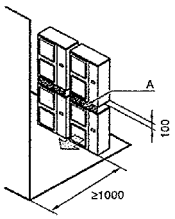
Legend Unit: mm

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present
- 1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.
- 2 In these cases, only 2 units can be installed.
- This situation is not allowed.

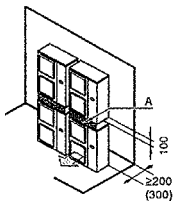
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



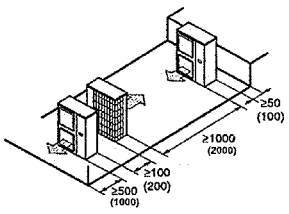
2. Obstacles exist in front of the air inlet



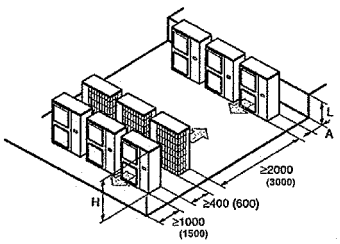
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



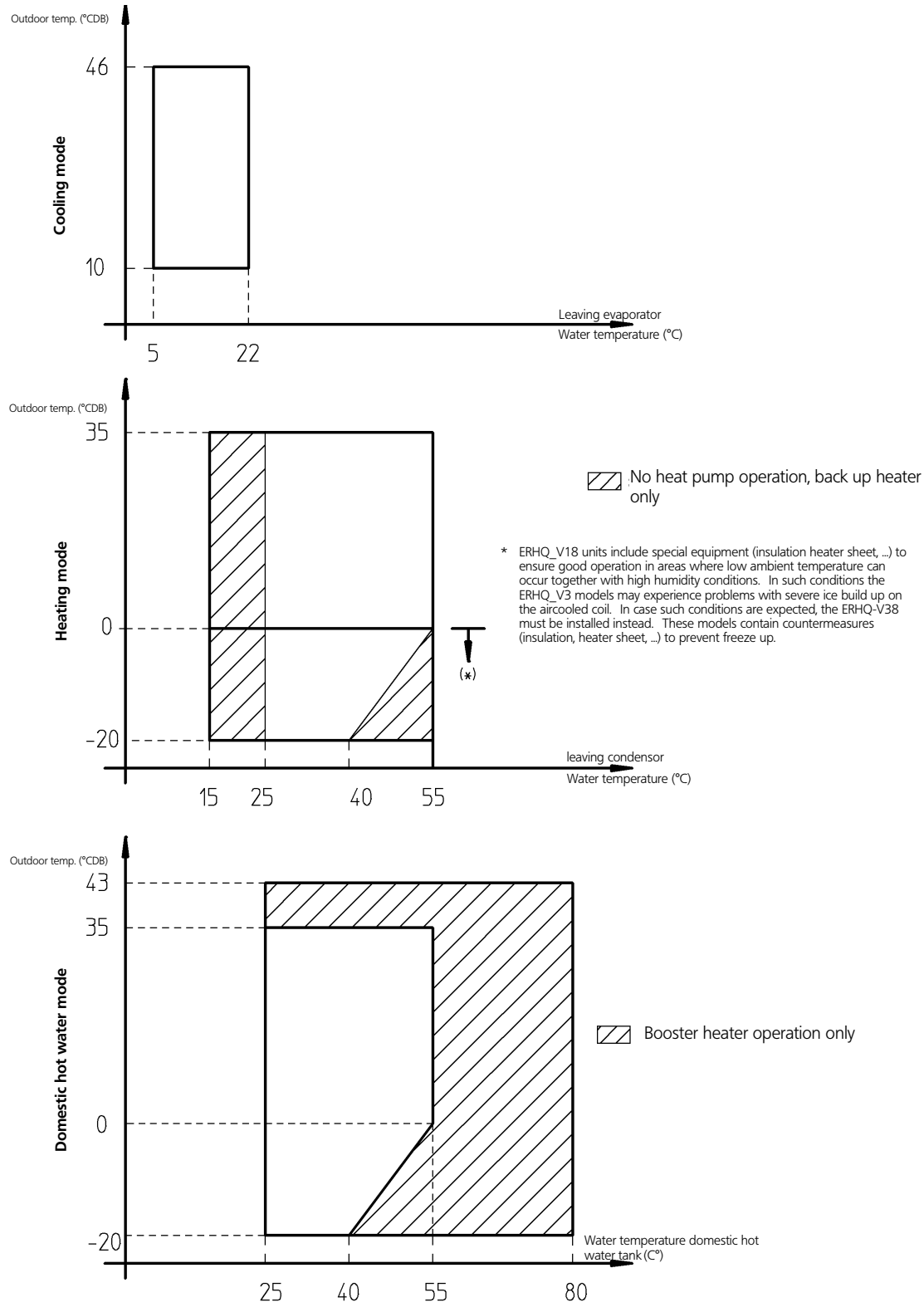
Relation of dimensions of H, A, and L are shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

9 Operation range

ERHQ011-016AAV3



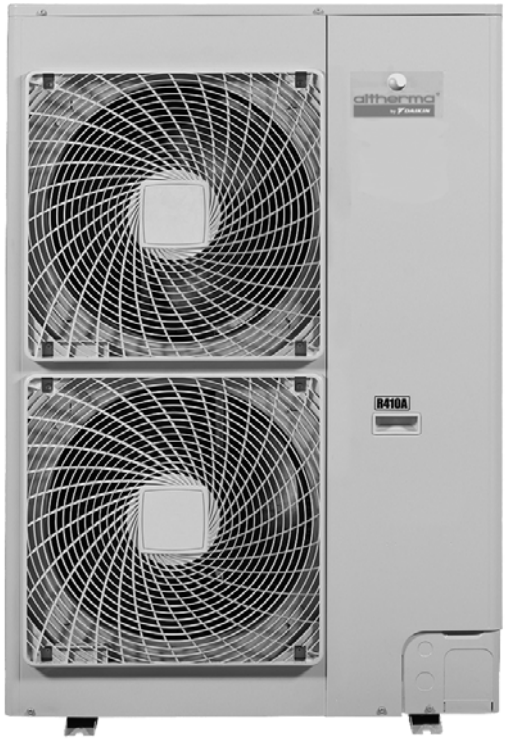
4TW57753-1B

TABLE OF CONTENTS

ERHQ011-016AAW1

1 Features

- Three phase large capacity outdoor unit
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort



2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				ERHQ011AAW1	ERHQ014AAW1	ERHQ016AAW1
For combination indoor units + outdoor units	Indoor Units			EKHBH016AB		
Condition 1	Heating capacity	Nominal	kW	11.32	14.50	16.05
	Heating PI	Nominal	kW	2.54	3.33	3.73
	COP	Nominal		4.46	4.35	4.30
Nominal Capacity	Heating capacity	Nominal	kW	10.98	13.57	15.11
	Heating PI	Nominal	kW	3.15	4.12	4.60
	COP	Nominal		3.48	3.29	3.29
For combination indoor units + outdoor units	Indoor Units			EKHBX016AB		
Condition 1	Heating capacity	Nominal	kW	11.32	14.50	16.05
	Cooling capacity	Nominal	kW	15.05	16.06	16.76
	Heating PI	Nominal	kW	2.54	3.33	3.73
	Cooling PI	Nominal	kW	4.44	5.33	6.06
	COP	Nominal		4.46	4.35	4.30
	EER	Nominal		3.39	3.01	2.76
Nominal Capacity	Heating capacity	Nominal	kW	10.98	13.57	15.11
	Cooling capacity	Nominal	kW	11.72	12.55	13.12
	Heating PI	Nominal	kW	3.15	4.12	4.60
	Cooling PI	Nominal	kW	4.22	5.00	5.65
	COP	Nominal		3.48	3.29	3.29
	EER	Nominal		2.78	2.51	2.32
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (DT = 5°C) - heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (DT = 5°C) - heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)		

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AAW1	ERHQ014AAW1	ERHQ016AAW1
Casing	Colour			Ivory white		
	Material			Painted galvanised steel plate		
Dimensions	Unit	Height	mm	1,345		
		Width	mm	900	900	900
		Depth	mm	320	320	320
	Packing	Height	mm	1,524		
		Width	mm	980	980	980
		Depth	mm	420	420	420
Weight	Unit		kg	108 (ERHQ*W1*)110 (ERHQ*W18*)		
	Packed Unit		kg	120 (ERHQ*W1*)122 (ERHQ*W18*)		
Packing	Material			EPS		
				Carton		
				Wood		
				PP (Straps)		
	Weight		kg	12	12	12
Heat Exchanger	Dimensions	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin Pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face Area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS(8)		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC motor		

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AAW1	ERHQ014AAW1	ERHQ016AAW1
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	780	780	780
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT1G-VDYR@S		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Operation Range	Heating	Min	°CWB	-20	-20	-20
		Max	°CWB	35	35	35
	Cooling	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Sanitary water	Min	°CDB	-20	-20	-20
		Max	°CDB	43	43	43
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	51	51	52
	Cooling	Sound Power	dBA	64	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Expansion valve(electronic type)		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Piping connections	Liquid (OD)	Quantity		1	1	1
		Type		Flare connection		
		Diameter (OD)	mm	9,52		
	Gas	Quantity		1	1	1
		Type		Flare connection		
		Diameter (OD)	mm	15,9		
	Drain	Quantity		3	3	3
		Type		Hole		
		Diameter (OD)	mm	26	26	26
		Quantity		1	1	1
		Type		Hole		
		Diameter (OD)	mm	18	18	18
	Piping Length	Minimum	m	5	5	5
		Maximum	m	75	75	75
		Equivalent	m	95	95	95
		Chargeless	m	10	10	10
	Additional Refrigerant Charge		kg/m	See installation manual outdoor unit 4PW42025-1		
	Installation height difference	Maximum	m	30	30	30
	Heat Insulation			Both liquid and gas pipes		
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		

2 Specifications

2-2 TECHNICAL SPECIFICATIONS		ERHQ011AAW1	ERHQ014AAW1	ERHQ016AAW1
Safety Devices		High pressure switch		
		Fan motor thermal protector		
		Fuse		
Standard Accessories	Item	Tie-wraps		
	Quantity	2	2	2
	Item	Installation manual		
	Quantity	1	1	1
Notes		The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
		Down to 3m with recharging of the outdoor unit. Refer to the installation manual of the outdoor unit.		
		Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (		
		Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		

2-3 ELECTRICAL SPECIFICATIONS				ERHQ011AAW1	ERHQ014AAW1	ERHQ016AAW1
Power Supply	Name			W1		
	Phase			3N~		
	Frequency		Hz	50	50	50
	Voltage		V	400	400	400
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Heating (A)	A	5.8	5.8	5.8
	Maximum running Current	Heating	A	13.5 (ERHQ*W1*) / 14 (ERHQ*W18*)		
		Cooling	A	13.5 (ERHQ*W1*) / 14 (ERHQ*W18*)		
	Recomended fuses		A	20	20	20
Wiring connections	For Power Supply	Remark		See installation manual outdoor unit 4PW42025-1		
	For connection with indoor	Remark		See installation manual outdoor unit 4PW42025-1		
Power Supply Intake				Outdoor unit only		
Notes				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Capacity tables

3 - 1 Heating capacity tables

ERHQ011-016AAW1

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
ERHQ11	-20	5,92	2,24	5,57	2,44	5,45	2,69	5,31	2,98				
	-15	6,70	2,28	6,30	2,49	6,15	2,74	5,98	3,04	5,74	3,38		
	-7	8,22	2,31	7,74	2,54	7,59	2,80	7,39	3,11	7,11	3,46	6,60	3,85
	-2	9,38	2,32	8,86	2,55	8,70	2,82	8,50	3,14	8,19	3,49	7,63	3,89
	2	10,43	2,31	9,88	2,55	9,72	2,83	9,52	3,15	9,20	3,51	8,60	3,91
	7	11,92	2,29	11,32	2,54	11,18	2,83	10,98	3,15	10,65	3,52	9,99	3,93
	12	12,93	2,22	12,31	2,47	12,20	2,76	12,02	3,09	11,69	3,46	11,01	3,87
	15	13,99	2,20	13,34	2,45	13,24	2,74	13,07	3,08	12,74	3,45	12,02	3,86
	20	15,90	2,14	15,20	2,40	15,13	2,70	14,98	3,04	14,22	3,42	13,46	3,84
ERHQ14	-20	7,69	2,89	7,46	3,15	7,25	3,45	5,69	3,80				
	-15	8,59	2,95	8,28	3,22	7,99	3,53	7,87	3,89	7,83	4,30		
	-7	10,43	3,02	10,02	3,30	9,61	3,63	9,40	4,01	9,27	4,43	8,87	4,89
	-2	11,87	3,05	11,39	3,34	10,91	3,68	10,65	4,06	10,49	4,49	10,02	4,96
	2	13,20	3,06	12,66	3,36	12,13	3,70	11,84	4,09	11,65	4,52	11,12	5,01
	7	15,11	3,07	14,50	3,33	13,90	3,72	13,57	4,12	13,35	4,56	12,73	5,05
	12	15,99	2,97	15,36	3,27	14,74	3,62	14,40	4,01	14,18	4,44	13,54	4,92
	15	17,33	2,96	16,66	3,26	16,00	3,61	15,64	4,01	15,41	4,45	14,72	4,93
	20	19,77	2,93	19,04	3,24	18,30	3,59	17,92	4,00	17,17	4,44	16,41	4,93
ERHQ16	-20	8,50	3,21	8,36	3,50	8,24	3,84	6,52	4,22				
	-15	9,46	3,28	9,24	3,58	9,02	3,93	8,94	4,32	8,73	4,77		
	-7	11,47	3,37	11,11	3,68	10,76	4,04	10,57	4,45	10,21	4,92	9,86	5,43
	-2	13,05	3,41	12,62	3,73	12,18	4,10	11,92	4,52	11,49	4,99	11,05	5,51
	2	14,52	3,44	14,02	3,76	13,52	4,13	13,22	4,56	12,71	5,04	12,20	5,56
	7	16,63	3,46	16,05	3,73	15,47	4,17	15,11	4,60	14,51	5,08	13,92	5,62
	12	17,34	3,36	16,74	3,69	16,13	4,06	15,76	4,49	15,13	4,96	14,51	5,49
	15	18,81	3,36	18,16	3,69	17,51	4,07	17,10	4,49	16,43	4,97	15,75	5,50
	20	21,49	3,34	20,77	3,68	20,04	4,06	19,59	4,50	18,83	4,98	18,07	5,52

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
ERHQ11	-20	5,02	2,19	4,72	2,39	4,62	2,63	4,49	2,91				
	-15	5,67	2,23	5,33	2,44	5,21	2,69	5,07	2,98	4,86	3,30		
	-7	6,96	2,26	6,56	2,49	6,43	2,75	6,26	3,05	6,02	3,39	5,59	3,77
	-2	7,78	2,22	7,35	2,45	7,22	2,71	7,06	3,01	6,80	3,35	6,33	3,73
	2	8,66	2,22	8,20	2,45	8,07	2,72	7,90	3,02	7,64	3,37	7,14	3,75
	7	11,92	2,29	11,32	2,54	11,18	2,83	10,98	3,15	10,65	3,52	9,99	3,93
	12	12,93	2,22	12,31	2,47	12,20	2,76	12,02	3,09	11,69	3,46	11,01	3,87
	15	13,99	2,20	13,34	2,45	13,24	2,74	13,07	3,08	12,74	3,45	12,02	3,86
	20	15,90	2,14	15,20	2,40	15,13	2,70	14,98	3,04	14,22	3,42	13,46	3,84
ERHQ14	-20	6,54	2,80	6,35	3,05	6,17	3,34	4,84	3,68				
	-15	7,30	2,86	7,05	3,12	6,80	3,42	6,69	3,77	6,66	4,16		
	-7	8,87	2,93	8,52	3,20	8,17	3,52	7,99	3,88	7,89	4,29	7,55	4,74
	-2	9,44	2,76	9,05	3,02	8,68	3,33	8,47	3,67	8,34	4,06	7,96	4,49
	2	10,50	2,77	10,07	3,04	9,65	3,35	9,41	3,70	9,26	4,09	8,84	4,53
	7	15,11	3,07	14,50	3,33	13,90	3,72	13,57	4,12	13,35	4,56	12,73	5,05
	12	15,99	2,97	15,36	3,27	14,74	3,62	14,40	4,01	14,18	4,44	13,54	4,92
	15	17,33	2,96	16,66	3,26	16,00	3,61	15,64	4,01	15,41	4,45	14,72	4,93
	20	19,77	2,93	19,04	3,24	18,30	3,59	17,92	4,00	17,17	4,44	16,41	4,93
ERHQ16	-20	7,02	3,12	6,91	3,39	6,81	3,72	5,39	4,10				
	-15	7,82	3,19	7,63	3,47	7,45	3,81	7,39	4,20	7,21	4,63		
	-7	9,48	3,27	9,18	3,57	8,89	3,92	8,73	4,32	8,44	4,77	8,14	5,27
	-2	9,99	3,04	9,65	3,32	9,32	3,65	9,12	4,02	8,79	4,44	8,45	4,90
	2	11,11	3,06	10,73	3,35	10,34	3,68	10,11	4,06	9,72	4,48	9,33	4,95
	7	16,63	3,46	16,05	3,73	15,47	4,17	15,11	4,60	14,51	5,08	13,92	5,62
	12	17,34	3,36	16,74	3,69	16,13	4,06	15,76	4,49	15,13	4,96	14,51	5,49
	15	18,81	3,36	18,16	3,69	17,51	4,07	17,10	4,49	16,43	4,97	15,75	5,50
	20	21,49	3,34	20,77	3,68	20,04	4,06	19,59	4,50	18,83	4,98	18,07	5,52

3TW57912-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For ERHQ011-16AAW1 models only: if Tamb < 4°C: bottom plate heater power input to be added = 95 W

3 Capacity tables

3 - 2 Cooling capacity tables

ERHQ011-016AAW1

Maximum Cooling Capacity

Model	Tamb	20		25		30		35		40		45	
	LWE [°C]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]
ERHQ11	7	12,99	3,17	12,88	3,48	12,44	3,83	11,72	4,22	10,74	4,65	9,54	5,13
	10	13,79	3,20	13,67	3,52	13,20	3,88	12,44	4,28	11,40	4,72	10,14	5,21
	13	15,16	3,24	15,02	3,56	14,51	3,93	13,67	4,34	12,54	4,79	11,00	5,45
	15	16,10	3,26	15,95	3,59	15,41	3,96	14,52	4,38	13,33	4,83	11,40	5,32
	18	17,77	3,29	17,18	3,63	16,26	4,02	15,05	4,44	13,61	4,90	11,54	4,91
	22	19,82	3,34	19,17	3,69	18,16	4,09	16,83	4,52	15,23	4,99	12,10	4,38
ERHQ14	7	13,92	3,79	13,81	4,14	13,34	4,54	12,55	5,00	11,13	4,79	9,85	5,28
	10	14,98	3,85	14,85	4,21	14,34	4,62	13,49	5,09	11,97	4,87	10,61	5,37
	13	16,45	3,92	16,30	4,29	15,74	4,70	14,81	5,18	13,15	4,96	11,00	5,45
	15	17,46	3,96	17,30	4,34	16,71	4,76	15,73	5,24	13,97	5,02	11,40	5,32
	18	19,00	4,03	18,36	4,41	17,37	4,85	16,06	5,33	14,05	5,10	11,54	4,91
	22	21,16	4,12	20,45	4,52	19,36	4,97	17,93	5,46	15,71	5,22	12,10	4,38
ERHQ16	7	14,55	4,30	14,46	4,70	13,98	5,15	13,12	5,65	11,59	5,39	9,85	5,28
	10	15,67	4,39	15,56	4,80	15,02	5,25	14,09	5,76	12,45	5,49	10,61	5,37
	13	17,22	4,48	17,08	4,90	16,48	5,36	15,47	5,87	13,67	5,59	11,00	5,45
	15	18,29	4,54	18,13	4,97	17,49	5,43	16,42	5,95	14,52	5,66	11,40	5,32
	18	19,91	4,64	19,23	5,07	18,17	5,54	16,76	6,06	14,60	5,76	11,54	4,91
	22	22,18	4,77	21,42	5,21	20,25	5,70	18,69	6,22	16,31	5,90	12,10	4,38

3TW57912-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)
LWE : Leaving Water Evaporator temperature (°C)
LWC : Leaving Water Condensor temperature (°C)
Tamb : Ambient temperature (°C) RH=85%

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

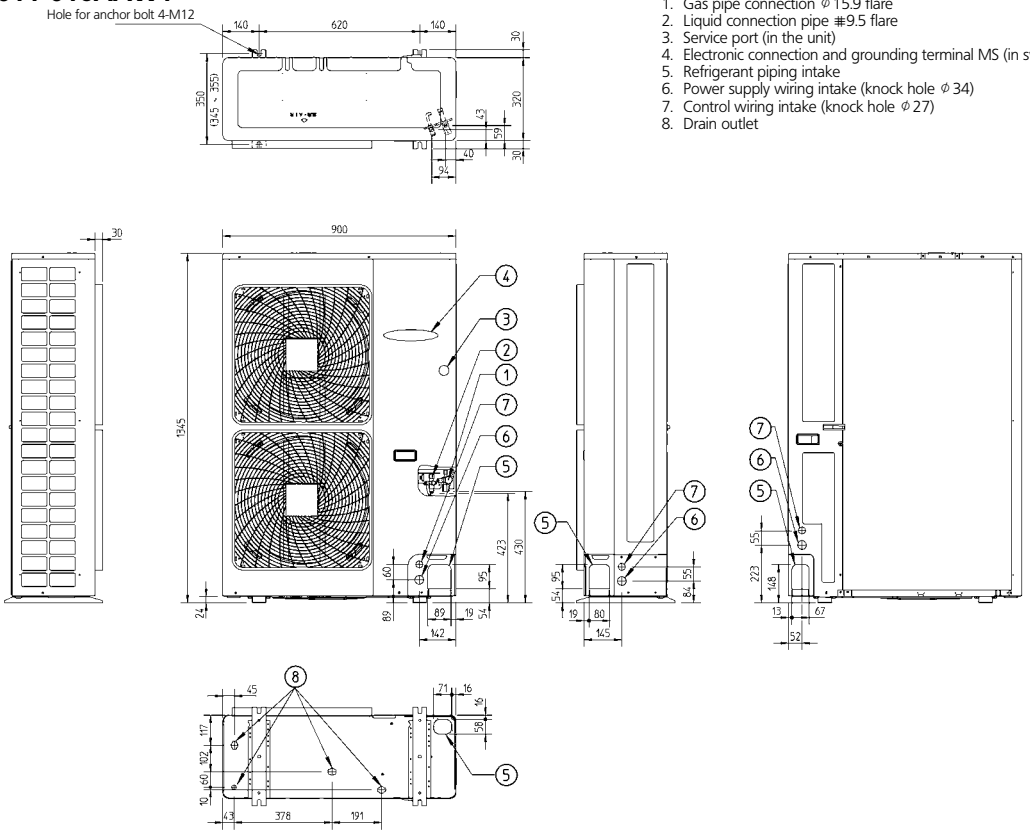
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For ERHQ011-16AAW1 models only: if Tamb < 4°C: bottom plate heater power input to be added = 95 W

4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

ERHQ011-016AAW1



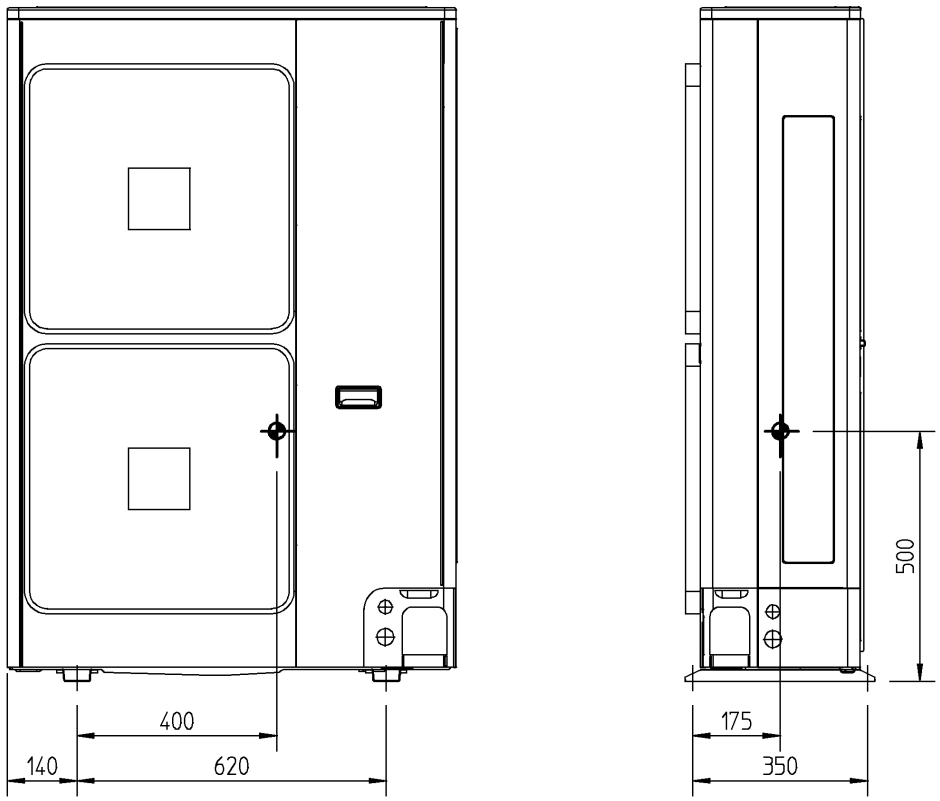
1. Gas pipe connection ϕ15.9 flare
2. Liquid connection pipe ⋕9.5 flare
3. Service port (in the unit)
4. Electronic connection and grounding terminal MS (in switch box)
5. Refrigerant piping intake
6. Power supply wiring intake (knock hole ϕ34)
7. Control wiring intake (knock hole ϕ27)
8. Drain outlet

4TW57914-1

4 Dimensional drawing & centre of gravity

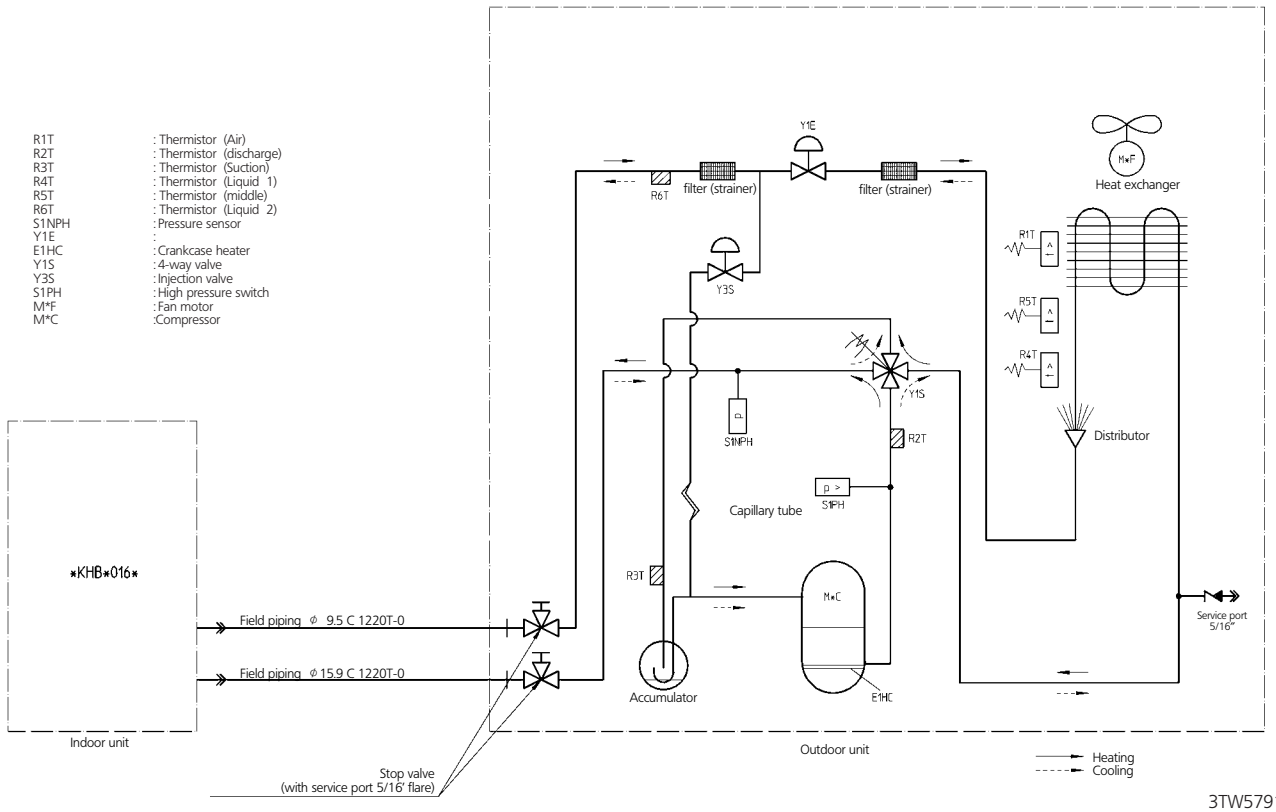
4 - 2 Centre of gravity

ERHQ011-016



5 Piping diagram

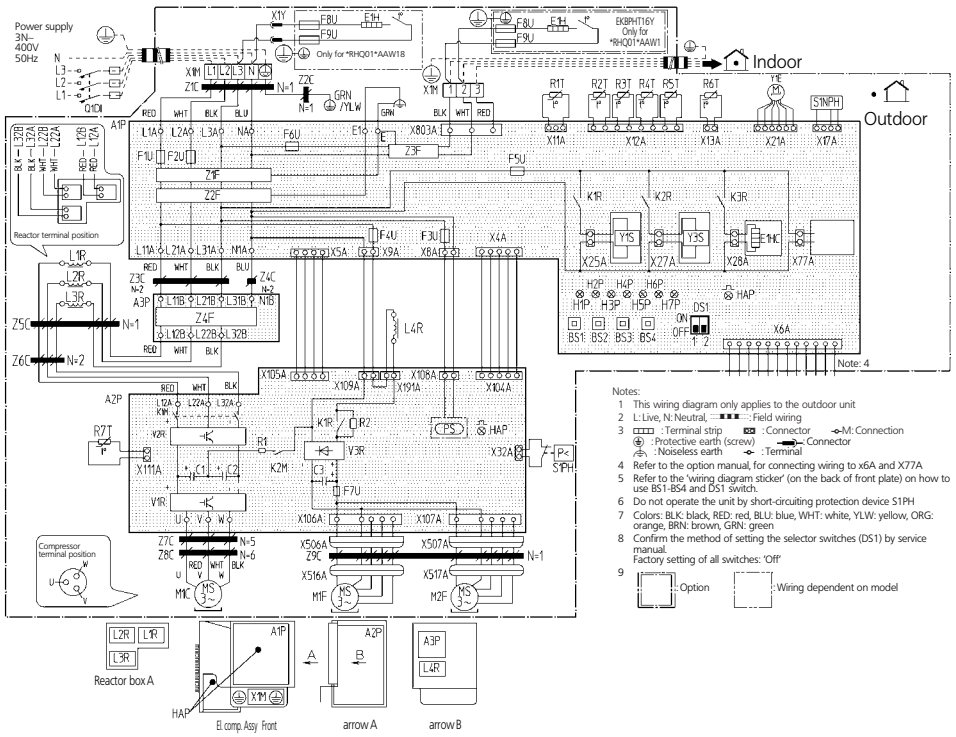
ERHQ011-016AAW1



6 Wiring diagram

6 - 1 Wiring diagram

ERHQ011-016AAW1



Notes:
1 This wiring diagram only applies to the outdoor unit
2 L: Live, N: Neutral, ▬▬: Field wiring
3 □□□: Terminal strip ⊠: Connector —M: Connection
⏚: Protective earth (screw) —▶: Connector
⏚: Noiseless earth —•: Terminal
4 Refer to the option manual, for connecting wiring to x6A and X77A
5 Refer to the 'wiring diagram sticker' (on the back of front plate) on how to use BS1-BS4 and DS1 switch.
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual.
Factory setting of all switches: 'Off'
9 Option Wiring dependent on model

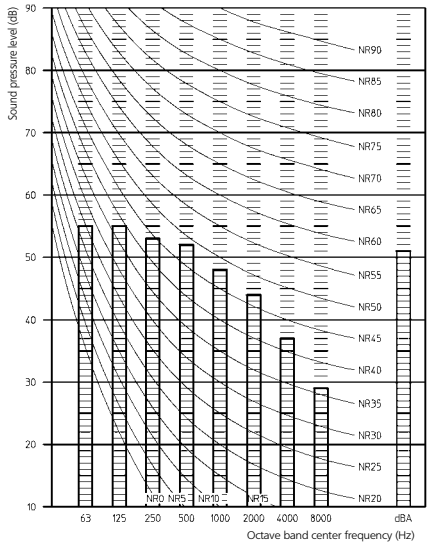
A1P	Printed circuit board
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (31.5A 500V)
F2U	Fuse (31.5A 500V)
F3U	Fuse (T 6.3A / 250V)
F4U	Fuse (T 6.3A / 250V)
F5U	Fuse (T 6.3A / 250V)
F6U	Fuse (T 6.3A / 250V)
F7U	Fuse (T 5.0A / 250V)
F8U, F9U	Fuse (F 1.0A / 250V)
HAP (A1P)	Pilot lamp (Service monitor-green)
HAP (A2P)	Pilot lamp (Service monitor-green)
H1P–7P (A1P)	Pilot lamp (Service monitor-orange)
K1M-K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R–L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
R1–R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (Heat exchanger middle)
R6T	Thermistor (liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (high)
V1R–V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C–Z9C	Noise filter
Z1F–Z4F	Noise filter
Q1DI	Earth leakage protector
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

2TW57916-1C

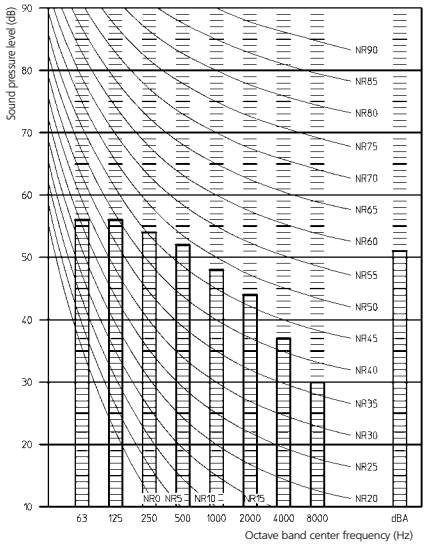
7 Sound data

7 - 1 Sound pressure spectrum

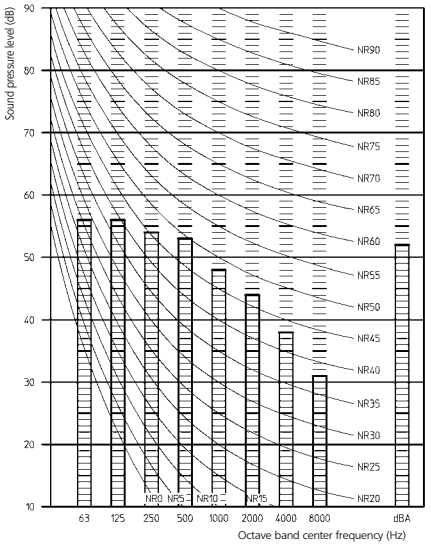
ERHQ011AAW1*
HEATING



ERHQ014AAW1*
HEATING

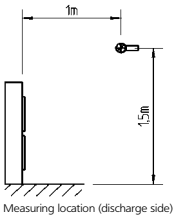


ERHQ016AAW1*
HEATING



Notes:

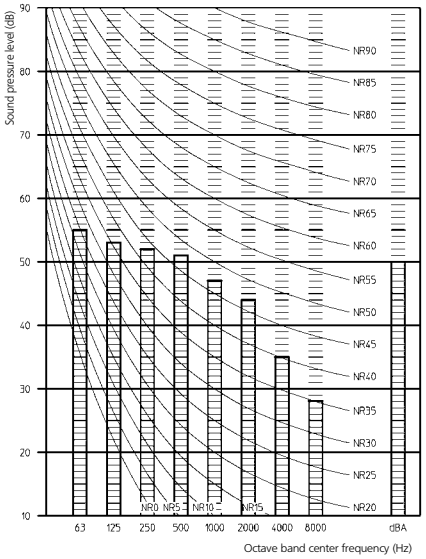
1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



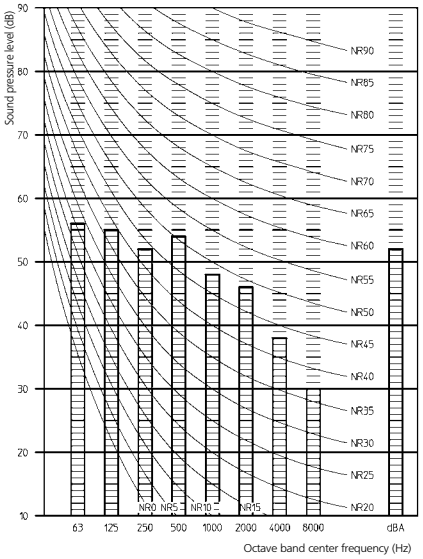
Measuring location (discharge side)

3TW57919-2

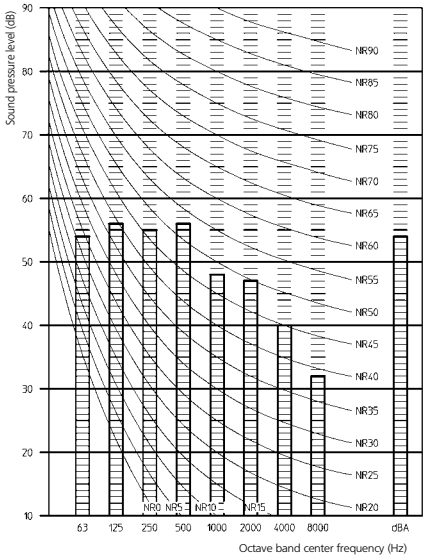
ERHQ011AAW1*
COOLING



ERHQ014AAW1*
COOLING

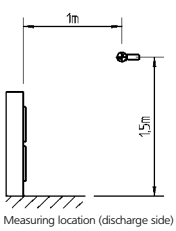


ERHQ016AAW1*
COOLING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



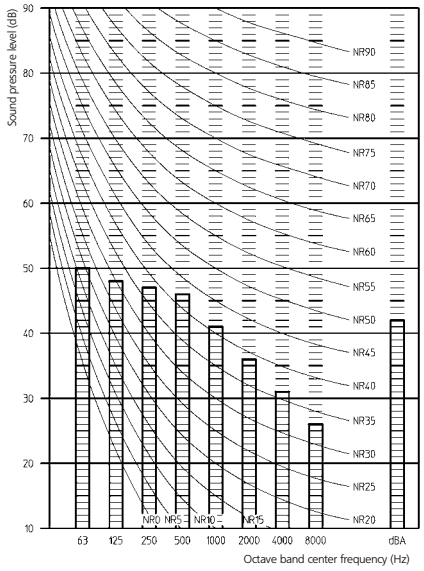
Measuring location (discharge side)

3TW57919-1

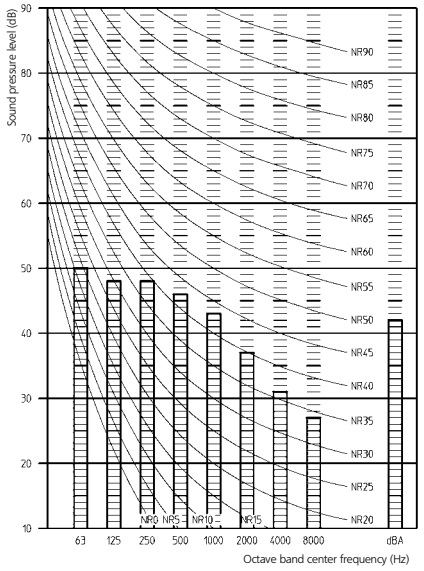
7 Sound data

7 - 2 Sound pressure night quiet mode

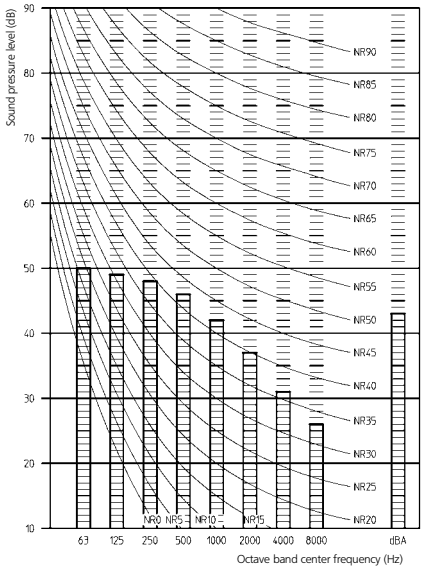
ERHQ011AAW1* HEATING



ERHQ014AAW1* HEATING

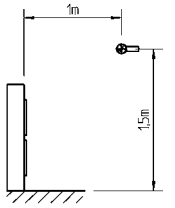


ERHQ016AAW1* HEATING



Notes:

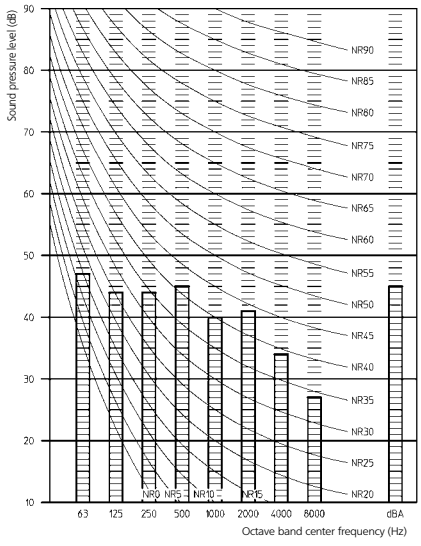
1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



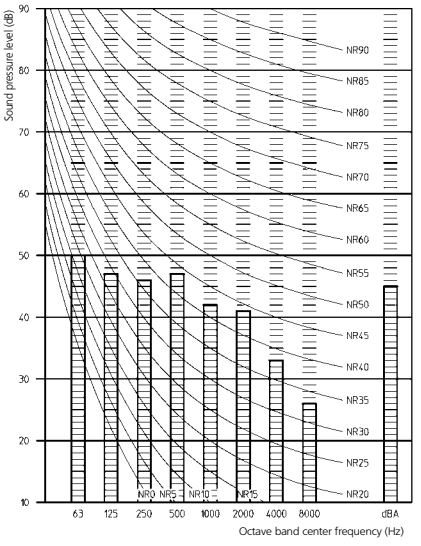
Measuring location (discharge side)

3TW57919-4

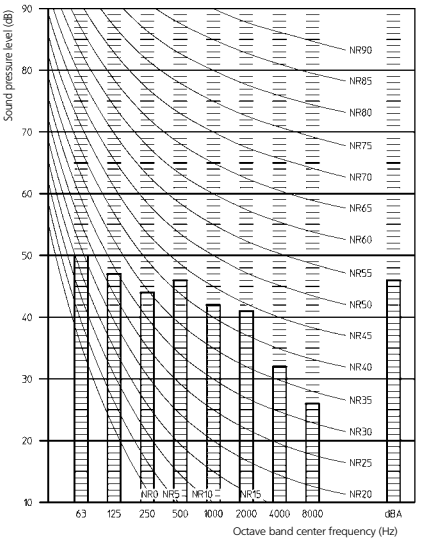
ERHQ011AAW1* COOLING



ERHQ014AAW1* COOLING

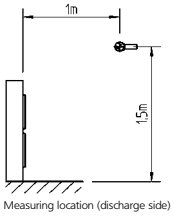


ERHQ016AAW1* COOLING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

3TW57919-3

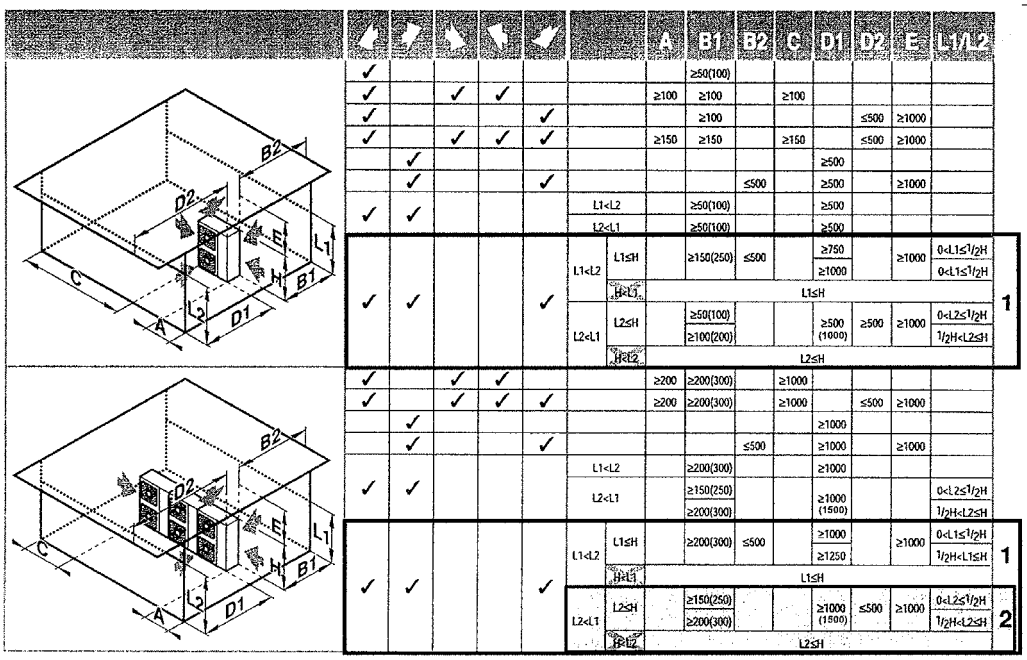
8 Installation

8 - 1 Service space

ERHQ011-016

A. Non stacked installation

Legend Unit: mm



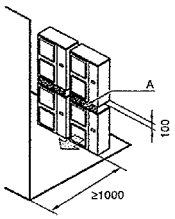
								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓			✓		L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓			✓						≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓					L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present
- 1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.
- 2 In these cases, only 2 units can be installed.
- This situation is not allowed.

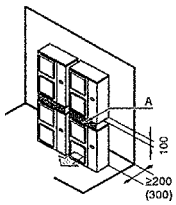
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



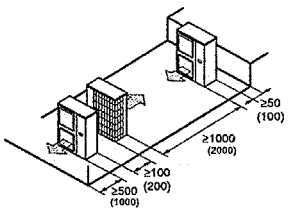
2. Obstacles exist in front of the air inlet



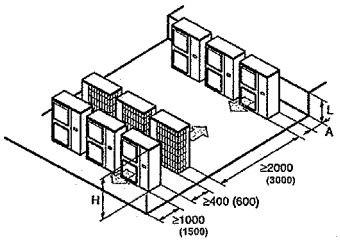
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



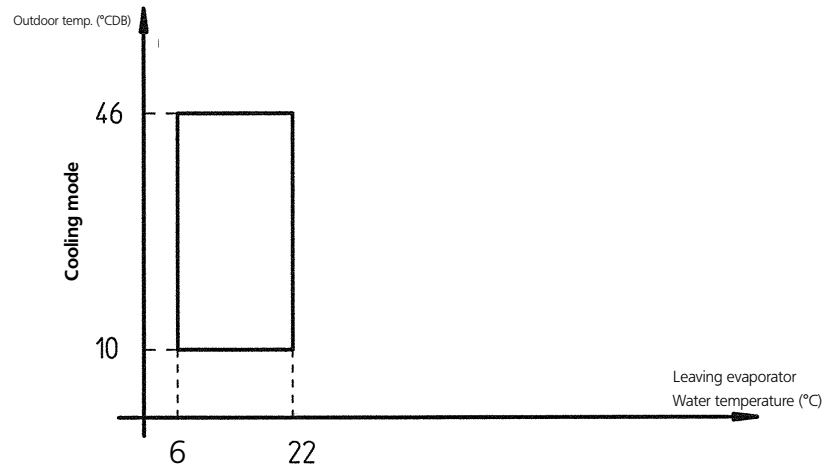
Relation of dimensions of H, A, and L are shown in the table below.

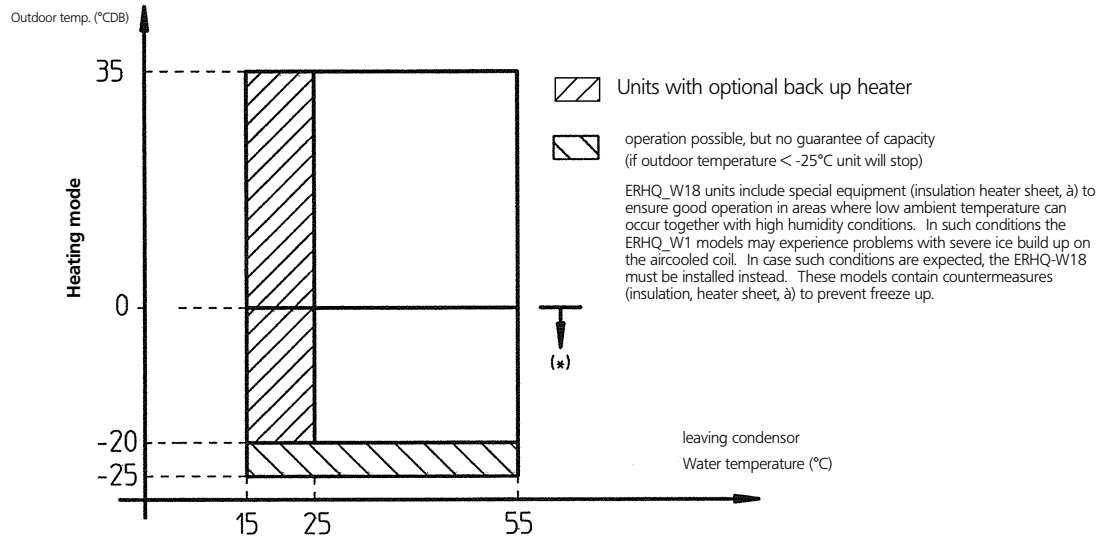
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

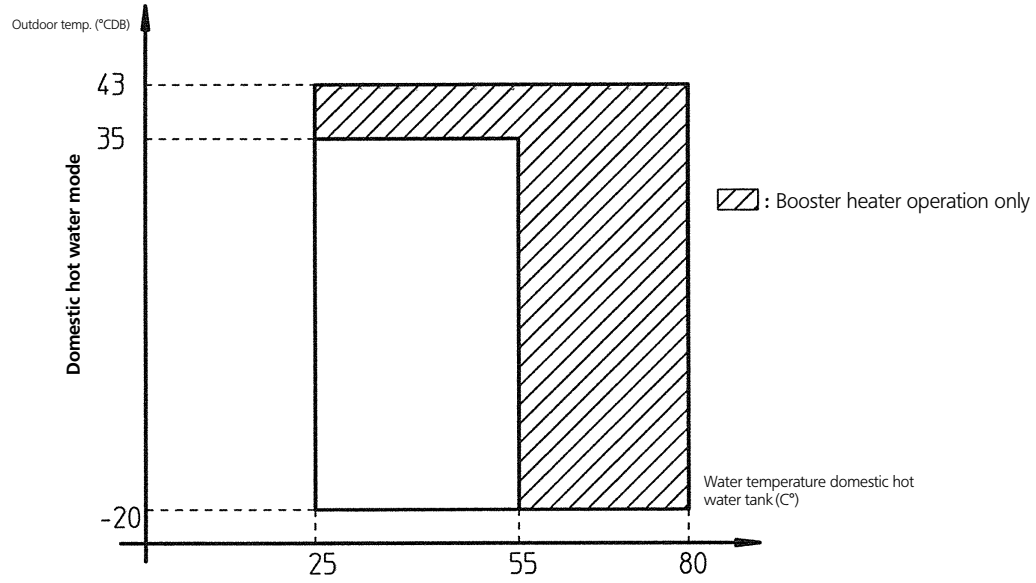
3TW26739-4

9 Operation range

ERHQ011-016AAW1







4TW57913-1A

TABLE OF CONTENTS

EKHBH-X016AB

1 Features

- Large capacity indoor unit
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHBH016AB	EKHBX016AB
Outdoor units				ERHQ16AAV3	
Nominal input (Indoor only)			W	230	230
Casing	Colour			RAL9010	
	Material			Epoxy polyester painted galvanised steel	
Dimensions	Packing	Height	mm	1,225	
		Width	mm	660	660
		Depth	mm	610	610
	Unit	Height	mm	922	922
		Width	mm	502	502
		Depth	mm	361	361
Weight	Unit		kg	55	55
	Packed Unit		kg	65	65
Packing	Material			EPS	
				Wood	
				Carton	
				PP (Straps)	
	Weight		kg	10	10
Main components	Pump	Type		Water cooled	
		Nr. of speed		2	2
Pump	Nominal ESP unit	Heating	kPa	35.0	35.0
		Cooling	kPa		46.8
Main components	Pump	Power input	W	210	210
	Water side Heat exchanger	Type		Brazed plate	
		Qty		1	1
		Water volume	l	1.01	1.01
		Water flow rate Min.	l/min	16	16
Water side Heat exchanger	Water flow rate Nom.	Heating	l/min	45.9	45.9
		Cooling	l/min		37.6
Main components	Water side Heat exchanger	Water flow rate Max.	l/min	58	58
		Insulation material		Polyurethane foam	
	Expansion vessel	Volume	l	10	10
		Max. water pressure	bar	3	3
		Pre pressure	bar	1	1
	Water filter	Diameter perforations	mm	1	1
		Material		Brass	
Water circuit	Piping connections diameter		inch	G 1-1/4 (MALE)	
	Piping		inch	1-1/4"	
	Safety valve		bar	3	3
	Manometer			Yes	
	Drain valve / Fill valve			Yes	
	Shut off valve			Yes	
	Air purge valve			Yes	
	Total water volume (6)		l	5,5	
Refrigerant Circuit	Gas side diameter		mm	15,9	
	Liquid side diameter		mm	9,52	
Sound level	Sound Pressure		dBA	28	28
Operation range	Ambient	Heating	°C	-20~35	
		Cooling	°C		10-46
	Waterside	Heating	°C	15-55	
		Cooling	°C		5-22

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS				EKHBH016AB	EKHBX016AB
Electric heater	Type			3V3	
	Power Supply	Phase		1~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current back-up heater	Running Current	A	13	13
Current back-up heater + booster heater (EKHWS* models)	Z-max	Text		0.29	0.29
	Running Current	*V3	A	26 (13+13)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		3G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6V3	
	Power Supply	Phase		1~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current back-up heater	Running Current	A	26	26
Current back-up heater	Z-max	Text		0.29	0.29
Electric heater	Current back-up heater	Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12 **	
Current back-up heater + booster heater (EKHWS* models)	Z-max	Text		0.17	0.17
	Running Current	*V3	A	39 (26+13)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		3G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6WN	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	400	400
	Current back-up heater	Running Current	A	8.7	8.7
Current back-up heater + booster heater (EKHWS* models)	Running Current	*V3	A	21,7 (8.7+13)	
		*Z2	A	16.2 (8.7+7.5)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
		*Z2		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			6T1	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current back-up heater	Running Current	A	15.1	15.1
Current back-up heater + booster heater (EKHWS* models)	Running Current	*V3	A	26.1 (15.1+13)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS				EKHBH016AB	EKHBX016AB
Electric heater	Type			9WN	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	400	400
	Current back-up heater	Running Current	A	13	13
Current back-up heater + booster heater (EKHWS* models)	Running Current	*V3	A	26 (13+13)	
		*Z2	A	20.5 (13+7.5)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
		*Z2		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
Electric heater	Type			9T1	
	Power Supply	Phase		3~	
		Frequency	Hz	50	50
		Voltage	V	230	230
	Current back-up heater	Running Current	A	22.6	22.6
		Minimum Ssc value		Equipment complying with EN/IEC 61000-3-12 **	
Current back-up heater + booster heater (EKHWS* models)	Running Current	*V3	A	35.6 (22.6+13)	
	Minimum Ssc value	*V3		Equipment complying with EN/IEC 61000-3-12 **	
Electric heater	Voltage range	Minimum		-10%	
		Maximum		+10%	
Wiring connections	For power supply backup heater	Quantity of wires		4G	
		Type of wires		Select diameter and type according to national and local regulations	
	Connection type			For power supply connection to Optional Warm Water Tank + Q2L	
	Quantity of wires			3G	
	Type of wires			Select diameter and type according to national and local regulations	
	Type of wires			For more details of the voltage range and current refer to installation manual EKHBH/X016AB*	
	Connection type			For connection with R5T	
	Quantity of wires			Wire included in option EKHWS*	
	Type of wires			Wire included in option EKHWS*	
	Connection type			For connection with A3P	
	Quantity of wires			Depends on thermostat type, refer to installation manual EKHBH/X016AB*	
	Type of wires			Select diameter and type according to national and local regulations	
	Type of wires			Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
	Connection type			For connection with M2S	
	Quantity of wires			3G	
	Type of wires			Select diameter and type according to national and local regulations	
	Type of wires			Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
	Connection type			For connection with M3S	
	Quantity of wires			3G or 4G	
	Type of wires			Select diameter and type according to national and local regulations	
	Type of wires			Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²	
Notes				Above mentioned power supply of the hydro box is for the backup heater only. The Switch box & pump of the hydrobox are supplied via the outdoor unit. The optional domestic warm water tank has a separate power supply.	
				Optional electric heater has 2 capacity steps except for the 3V3 model which has only 1 capacity step.	
				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	
				(*) 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 <= 75A	
				(**) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16A and <= 75A per phase	
				(***) System impedance	

3 Options

Factory mounted optional equipment for EKHB(H/X)016AB**

Reference	Description												
	Heating only model EKHBH016A... Reversible model EKHBX016A...	B3V3	B3V3	B6V3	B6V3	B6WN	B6WN	B6T1	B6T1	B9WN	B9WN	B9T1	B9T1
3V3	Back up heater 3kW 1~230 V	○	○	—	—	—	—	—	—	—	—	—	—
6V3	Back up heater 6kW 1~230 V	—	—	○	○	—	—	—	—	—	—	—	—
6WN	Back up heater 6kW 3~400 V	—	—	—	—	○	○	—	—	—	—	—	—
6T1	Back up heater 6kW 3~230 V	—	—	—	—	—	—	○	○	—	—	—	—
9WN	Back up heater 9kW 3~400 V	—	—	—	—	—	—	—	—	○	○	—	—
9T1	Back up heater 9kW 3~230 V	—	—	—	—	—	—	—	—	—	—	○	○

Outdoor combination table for EKHB(H/X)016AB**

		ERHQ011AA(V3*/W1*)	ERHQ014AA(V3*/W1*)	ERHQ016AA(V3*/W1*)
EKHBH016AB*	Heating only indoor unit	○	○	○
EKHBX016AB*	Reversible indoor unit	○	○	○

Note:
ERHQ(W18/V38) units include special equipment (insulation heater sheet, ...) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the ERHQ(W1/V3) models may experience problems with severe ice build up on the aircooled coil. In case such conditions are expected, the ERHQ(W18/V38) must be installed instead. These models contain countermeasures (insulation, heater sheet, ...) to prevent freeze up.

Kit availability for ERHQ011-016AA**

		ERHQ011AA(V3/W1)	ERHQ014AA(V38/W18)	ERHQ014AA(V3/W1)	ERHQ014AA(V38/W18)	ERHQ016AA(V3/W1)	ERHQ016AA(V38/W38)
EKBPHT16Y	Bottom plate heater (2)	○	-	○	-	○	-
EKDK04	drain plug kit (2)	○	-	○	-	○	-

Kit availability for EKHB(H/X)016AB*

Reference	Description												
	Heating only model EKHBH016A... Reversible model EKHBX016A...	B3V3	B3V3	B6V3	B6V3	B6WN	B6WN	B6T1	B6T1	B9WN	B9WN	B9T1	B9T1
EKHWS150(A/B)3V3	Stainless domestic hot water tank 150l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS200(A/)B3V3	Stainless domestic hot water tank 200l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS300(A/B)3V3	Stainless domestic hot water tank 300l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWS200(A/B)3Z2	Stainless domestic hot water tank 200l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWS300(A/B)3Z2	Stainless domestic hot water tank 300l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWSU150(A/B)3V3	Stainless domestic hot water tank 150l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWSU200(A/B)3V3	Stainless domestic hot water tank 200l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWSU300(A/B)3V3	Stainless domestic hot water tank 300l 1-230V	○	○	○	○	○ (*)	○ (*)	○	○	○ (*)	○ (*)	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1-230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1-230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1-230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1-230V	○	○	○	○	○(*)	○(*)	○	○	○(*)	○(*)	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2-400V	-	-	-	-	○	○	-	-	○	○	-	-
EKHBDP	Option kit for condensate free cooling operation	-	○	-	○	-	○	-	○	-	○	-	○
EKRP1HB	Digital I/O PCB (1)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

(*) If neutral line is available

Kit available for EKHWS*

Reference	Description												
	EKHWE(T)*3(V3/Z2) EKHWS*3(V3/Z2) EKHWSU*3V3	150A	200A	300A	150(A/B)	200(A/B)	300(A/B)	150A	200A	300A	150B	200B	300B
EKUHWA	Option kit for UK EKHWSU150-300V3	-	-	-	-	-	-	○	○	○	○	○	○
EKUHWB	Option kit 1 for UK EKHWSU150-300V3 (7)	-	-	-	-	-	-	○(5)	○(5)	○(5)	○	○	○
EKUHW2WB	Option kit 2 for UK EKHWSU150-300V3 (7)	-	-	-	-	-	-	○(5)	○(5)	○(5)	○(6)	○(6)	○(6)
EKSOLHWAV1	Solarkit (5)	○	○	○	○	○	○	○	○	○	○	○	○
EKWBSWW150	Wall bracket for EKHWS(U)150(A/B)3V3 or EKSWW150V3	○	-	-	○	-	-	○	-	-	○	-	-

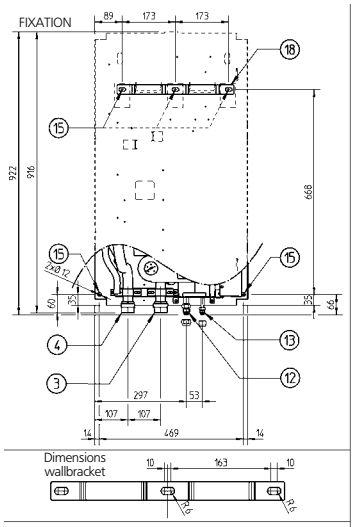
Remarks: Other combinations than mentioned in this option TW are not guaranteed.
(1) Address card that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included.
(2) It is not allowed to combine bottom plate heater and drain plug/stop kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.
(5) If installation on tank A version both kits are required
(6) Kit is only necessary when installing EKSOLHWAV1 on a UK tank B-series (EKHWSU(150/200/300)B3V3
(7) EKUHWB = EKUHWA -(Kit is only necessary when installing EKSOLHWAV1 on a UK tank B-series)
EKUHW2WB = 2 way valve and 2 way valve accessories

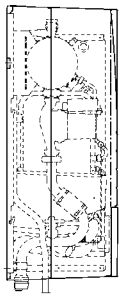
3TW57819-2C

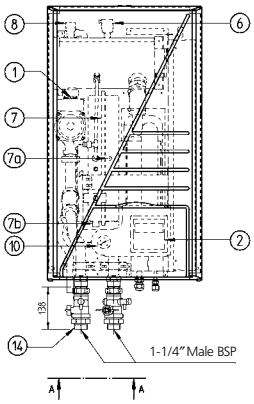
4 Dimensional drawing & centre of gravity

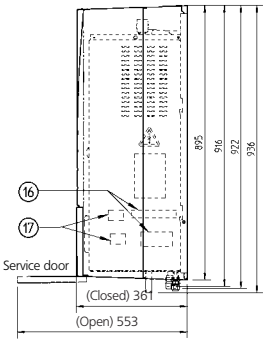
4 - 1 Dimensional drawing

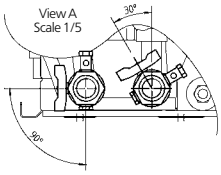
EKHBH016AB

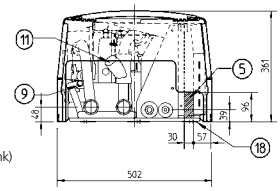




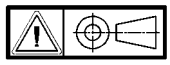






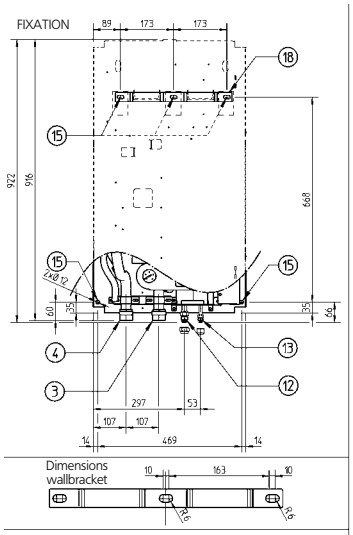


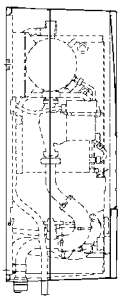
Center of gravity
① Pump + switch for speed setting
② Remocon
③ Water IN connection: 1 1/4" M BSP
④ Water OUT connection: 1 1/4" M BSP
⑤ Power supply intake (+ sanitary warm water tank)
⑥ Air purge
⑦ Expansion vessel+Ⓐnipple+ⒷDrain
⑧ Blow off valve
⑨ Blow off drain (flexible hose Φ 20)
⑩ Pressure gauge
⑪ Water filter
⑫ Suction pipe connection Φ 15.9 flare connection
⑬ Liquid pipe connection Φ 9.52 flare connection
⑭ Shut off valves with drain/fill valve (accessory delivered with unit)
⑮ Holes for fixation
⑯ Switchbox terminals
⑰ Switchbox terminals option sanitary warm water tank
⑱ Wallbracket

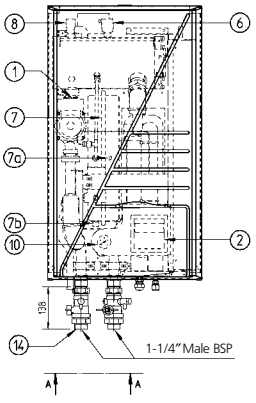


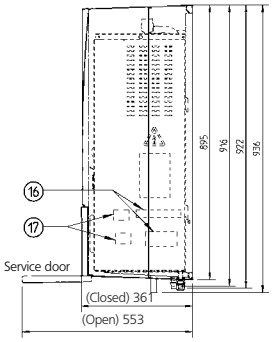
3TW57754-1A

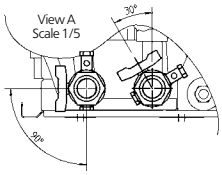
EKHBX016AB

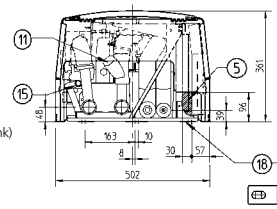


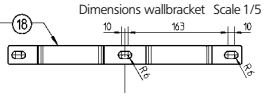




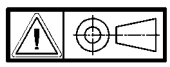








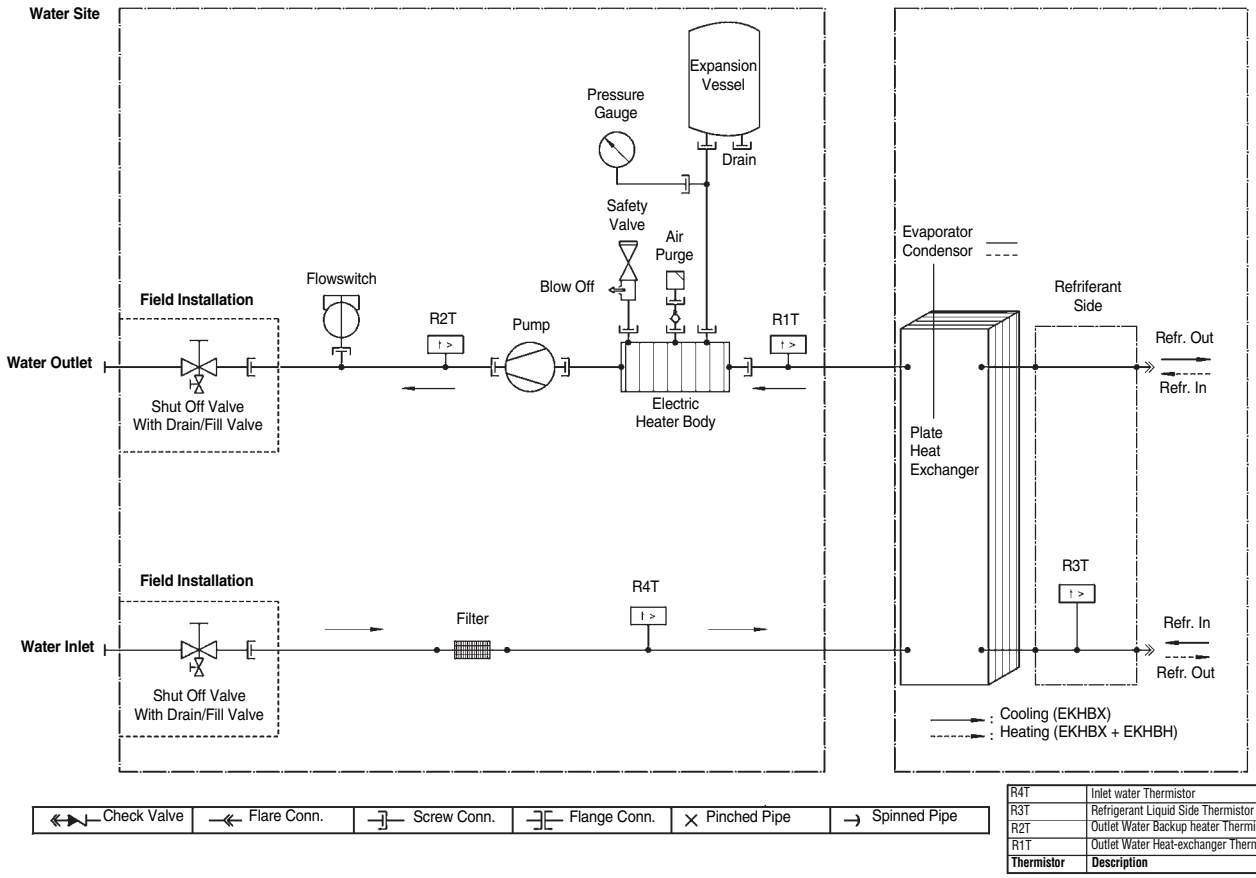
Center of gravity
① Pump + switch for speed setting
② Remocon
③ Water IN connection: 1 1/4" M BSP
④ Water OUT connection: 1 1/4" M BSP
⑤ Power supply intake (+ sanitary warm water tank)
⑥ Air purge
⑦ Expansion vessel+Ⓐnipple+ⒷDrain
⑧ Blow off valve
⑨ Blow off drain (flexible hose Φ 20)
⑩ Pressure gauge
⑪ Water filter
⑫ Suction pipe connection Φ 15.9 flare connection
⑬ Liquid pipe connection Φ 9.52 flare connection
⑭ Shut off valves with drain/fill valve (accessory delivered with unit)
⑮ Holes for fixation
⑯ Switchbox terminals
⑰ Switchbox terminals option sanitary warm water tank
⑱ Wallbracket



3TW57754-2A

5 Piping diagram

EKHBH(X)016AB



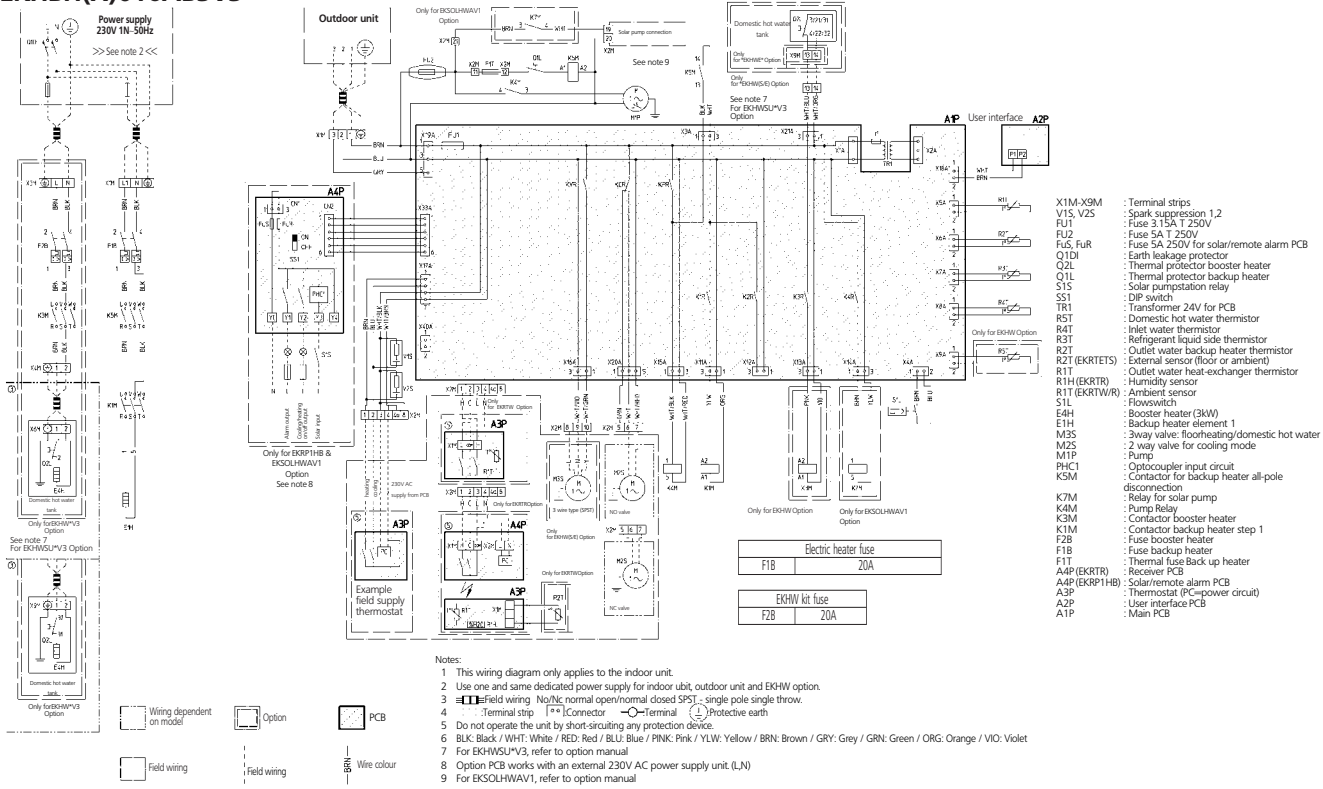
Thermistor	Description
R1T	Outlet Water Heat-exchanger Thermistor
R2T	Outlet Water Backup heater Thermistor
R3T	Refrigerant Liquid Side Thermistor
R4T	Inlet water Thermistor

3TW57755-1

6 Wiring diagram

6 - 1 Wiring diagram

EKHBH(X)016AB3V3

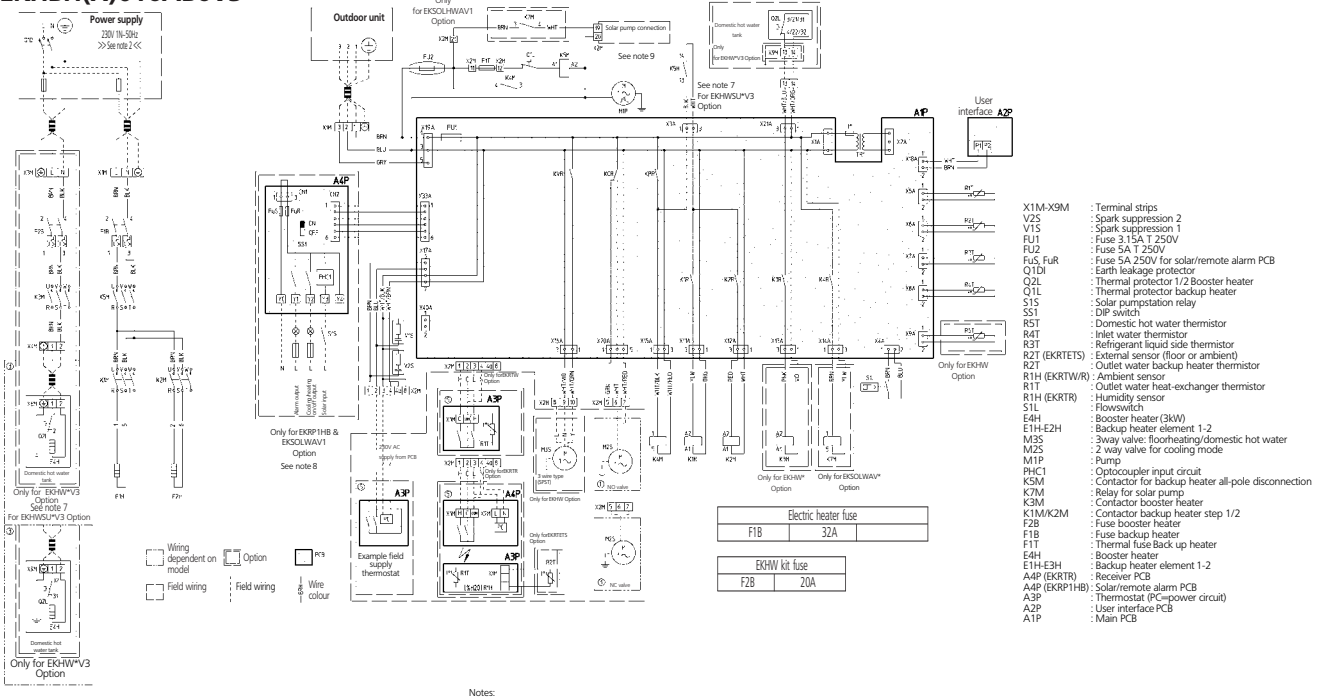


X1M-X9M : Terminal strips
V1S, V2S : Spark suppression 1,2
FU1 : Fuse 3.15A T 250V
FU2 : Fuse 5A T 250V
FuS, FuR : Fuse 5A 250V for solar/remote alarm PCB
Q1DI : Earth leakage protector
Q2L : Thermal protector booster heater
Q1L : Thermal protector backup heater
S1S : Solar pumpstation relay
SS1 : DIP switch
TR1 : Transformer 24V for PCB
R5T : Domestic hot water thermistor
R4T : Inlet water thermistor
R3T : Refrigerant liquid side thermistor
R2T : Outlet water backup heater thermistor
R2T (EKRTETS) : External sensor (floor or ambient)
R1T : Outlet water heat-exchanger thermistor
R1H (EKRTR) : Humidity sensor
R1T (EKRTW/R) : Ambient sensor
S1L : Flowswitch
E4H : Booster heater (3kW)
E1H : Backup heater element 1
M3S : 3way valve: floorheating/domestic hot water
M2S : 2 way valve for cooling mode
M1P : Pump
PHC1 : Optocoupler input circuit
K5M : Contactor for backup heater all-pole disconnection
K7M : Relay for solar pump
K4M : Pump Relay
K3M : Contactor booster heater
K1M : Contactor backup heater step 1
F2B : Fuse booster heater
F1B : Fuse backup heater
F1T : Thermal fuse Back up heater
A4P (EKRTR) : Receiver PCB
A4P (EKRP1HB) : Solar/remote alarm PCB
A3P : Thermostat (PC=power circuit)
A2P : User interface PCB
A1P : Main PCB

Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow / BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (L,N)
9 For EKSOLHWAV1, refer to option manual

3TW57816-2B

EKHBH(X)016AB6V3



X1M-X9M : Terminal strips
V2S : Spark suppression 2
V1S : Spark suppression 1
FU1 : Fuse 3.15A T 250V
FU2 : Fuse 5A T 250V
FuS, FuR : Fuse 5A 250V for solar/remote alarm PCB
Q1DI : Earth leakage protector
Q2L : Thermal protector 1/2 Booster heater
Q1L : Thermal protector backup heater
S1S : Solar pumpstation relay
SS1 : DIP switch
R5T : Domestic hot water thermistor
R4T : Inlet water thermistor
R3T : Refrigerant liquid side thermistor
R2T (EKRTETS) : External sensor (floor or ambient)
R2T : Outlet water backup heater thermistor
R1H (EKRTW/R) : Ambient sensor
R1T : Outlet water heat-exchanger thermistor
R1H (EKRTR) : Humidity sensor
S1L : Flowswitch
E4H : Booster heater (3kW)
E1H-E2H : Backup heater element 1-2
M3S : 3way valve: floorheating/domestic hot water
M2S : 2 way valve for cooling mode
M1P : Pump
PHC1 : Optocoupler input circuit
K5M : Contactor for backup heater all-pole disconnection
K7M : Relay for solar pump
K3M : Contactor booster heater
K1M/K2M : Contactor backup heater step 1/2
F2B : Fuse booster heater
F1B : Fuse backup heater
F1T : Thermal fuse Back up heater
E4H : Booster heater
E1H-E3H : Backup heater element 1-2
A4P (EKRTR) : Receiver PCB
A4P (EKRP1HB) : Solar/remote alarm PCB
A3P : Thermostat (PC=power circuit)
A2P : User interface PCB
A1P : Main PCB

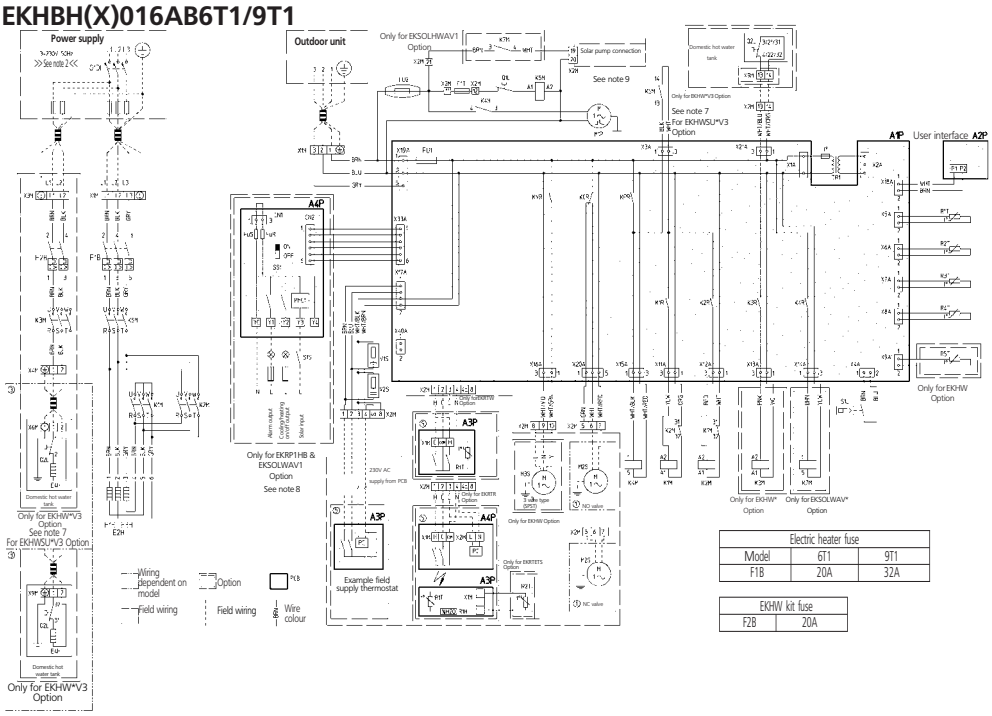
Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 :Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit.
9 For EKSOLHWAV1, refer to option manual

3TW57816-3B

6 Wiring diagram

6 - 1 Wiring diagram

EKHBH(X)016AB6T1/9T1



Electric heater fuse		
Model	6T1	9T1
F1B	20A	32A

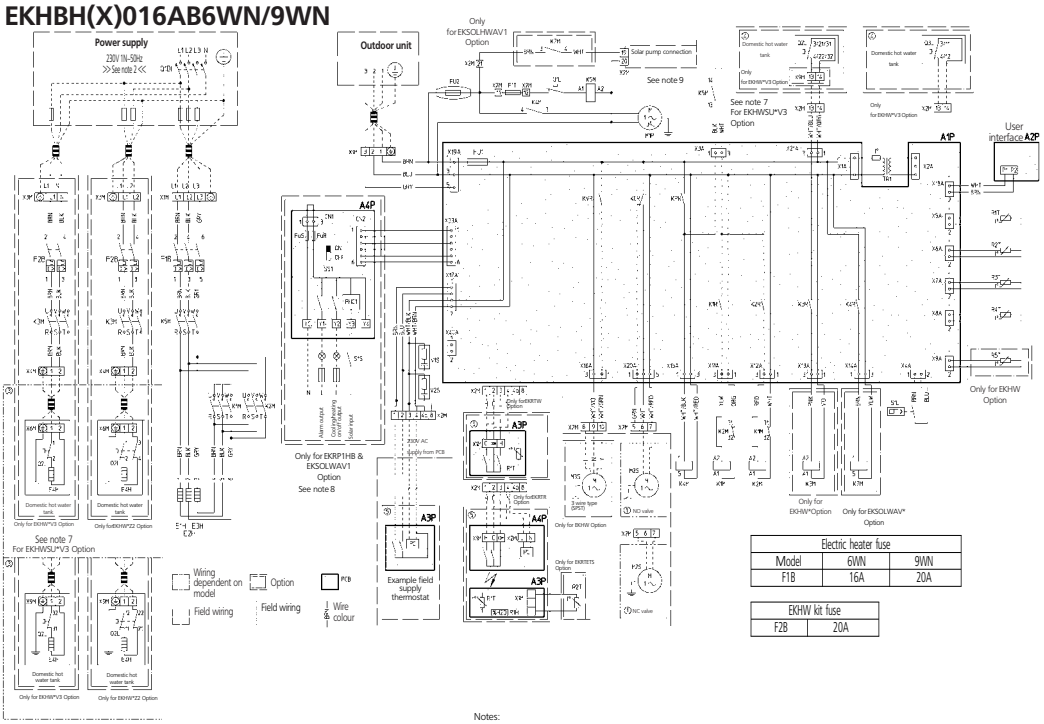
EKHW kit fuse	
F2B	20A

X1M-X9M	: Terminal strips
V2S	: Spark suppression 2
V1S	: Spark suppression 1
FU1	: Fuse 3.15A T 250V
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
Q1DI	: Earth leakage protector
Q2L/Q3L	: Thermal protector 1/2 Booster heater
Q1L	: Thermal protector backup heater
S1S	: Solar pumpstation relay
SS1	: DIP switch
R5T	: Domestic hot water thermistor
R4T	: Inlet water thermistor
R3T	: Refrigerant liquid side thermistor
R2T (EKRTETS)	: External sensor (floor or ambient)
R2T	: Outlet water backup heater thermistor
R1H (EKRTW/R)	: Ambient sensor
R1T	: Outlet water heat-exchanger thermistor
R1H (EKRTR)	: Humidity sensor
S1L	: Flowswitch
E4H	: Booster heater (3kW)
E1H-E3H	: Backup heater element 1-3
M3S	: 3way valve: floorheating/domestic hot water
M2S	: 2 way valve for cooling mode
M1P	: Pump
PHC1	: Optocoupler input circuit
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
K3M	: Contactor booster heater
K1M/K2M	: Contactor backup heater step 1/2
F2B	: Fuse booster heater
F1B	: Fuse backup heater
F1T	: Thermal fuse Back up heater
E4H	: Booster heater
E1H-E3H	: Backup heater element 1-3
A4P (EKRTR)	: Receiver PCB
A4P (EKRP1HB)	: Solar/remote alarm PCB
A3P	: Thermostat (PC=power circuit)
A2P	: User interface PCB
A1P	: Main PCB

Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit.
9 For EKSOLHWAV1, refer to option manual

3TW57816-6B

EKHBH(X)016AB6WN/9WN



Electric heater fuse		
Model	6WN	9WN
F1B	16A	20A

EKHW kit fuse	
F2B	20A

X1M-X9M	: Terminal strips
V2S	: Spark suppression 2
V1S	: Spark suppression 1
FU1	: Fuse 3.15A T 250V
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
Q1DI	: Earth leakage protector
Q2L/Q3L	: Thermal protector 1/2 Booster heater
Q1L	: Thermal protector backup heater
S1S	: Solar pumpstation relay
SS1	: DIP switch
R5T	: Domestic hot water thermistor
R4T	: Inlet water thermistor
R3T	: Refrigerant liquid side thermistor
R2T (EKRTETS)	: External sensor (floor or ambient)
R2T	: Outlet water backup heater thermistor
R1H (EKRTW/R)	: Ambient sensor
R1T	: Outlet water heat-exchanger thermistor
R1H (EKRTR)	: Humidity sensor
S1L	: Flowswitch
E4H	: Booster heater (3kW)
E1H-E3H	: Backup heater element 1-3
M3S	: 3way valve: floorheating/domestic hot water
M2S	: 2 way valve for cooling mode
M1P	: Pump
PHC1	: Optocoupler input circuit
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
K3M	: Contactor booster heater
K1M/K2M	: Contactor backup heater step 1/2
F2B	: Fuse booster heater
F1B	: Fuse backup heater
F1T	: Thermal fuse Back up heater
E4H	: Booster heater
E1H-E3H	: Backup heater element 1-3
A4P (EKRTR)	: Receiver PCB
A4P (EKRP1HB)	: Solar/remote alarm PCB
A3P	: Thermostat (PC=power circuit)
A2P	: User interface PCB
A1P	: Main PCB

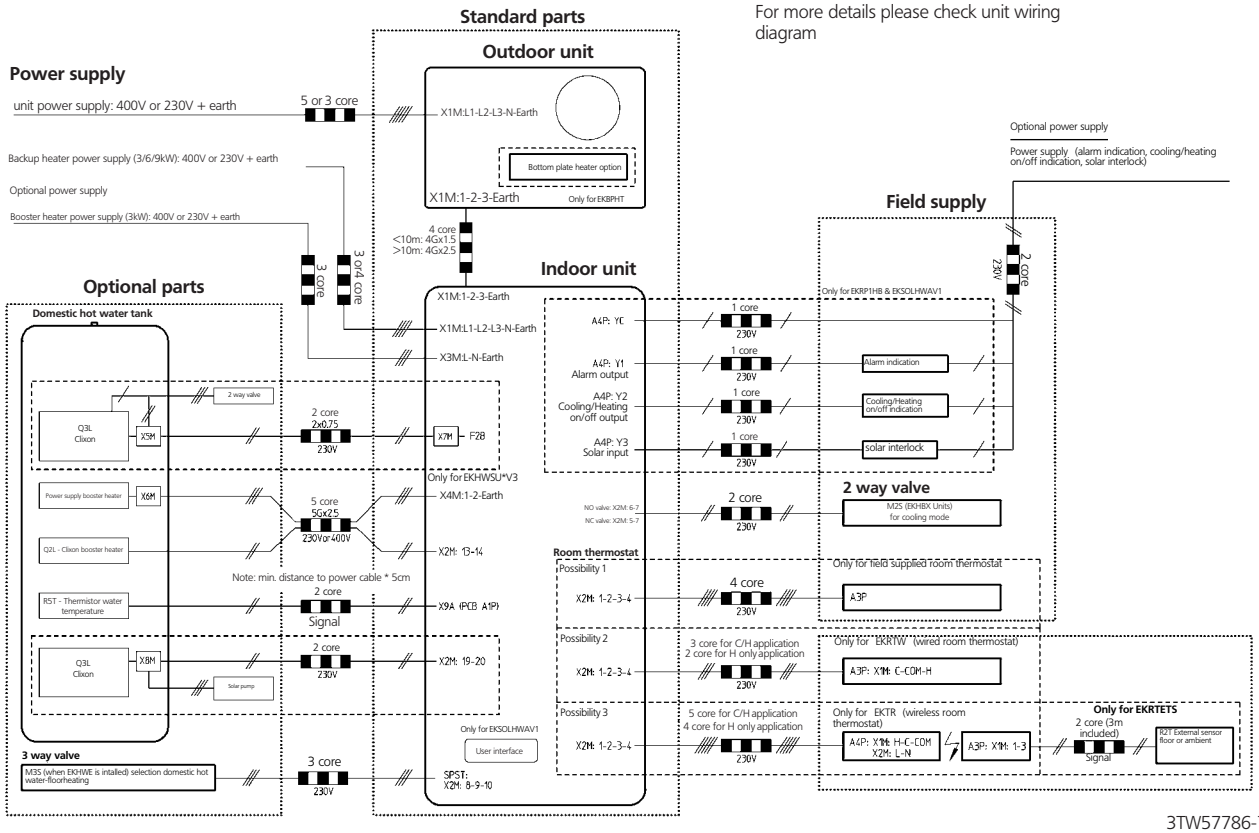
Notes:
1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor ubit, outdoor unit and EKHW option.
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-sircuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For EKHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit.
9 For EKSOLHWAV1, refer to option manual

3TW57816-4B

6 Wiring diagram

6 - 2 External connection diagram

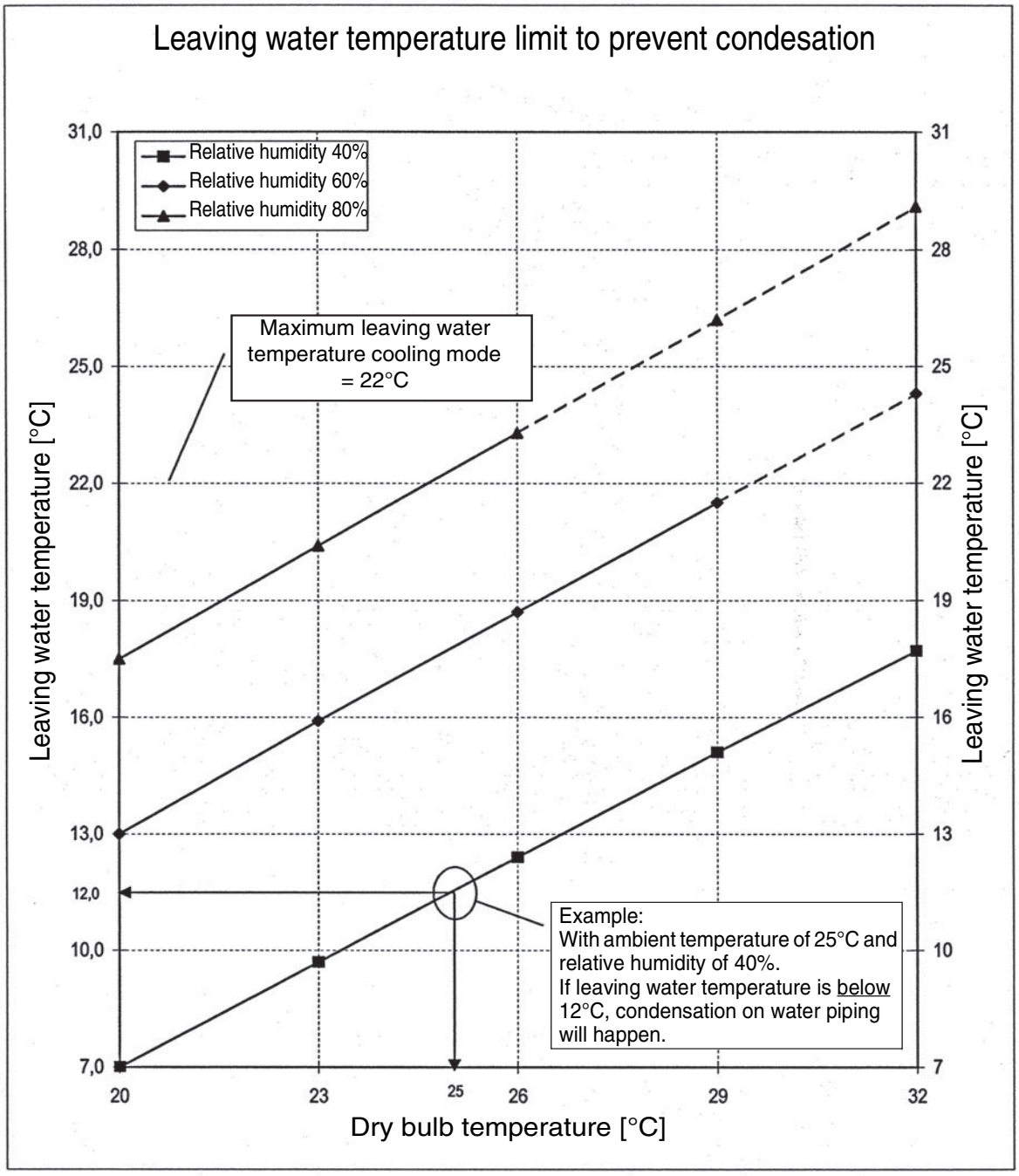
Electrical connection diagram Altherma



7 Installation

7 - 1 Drainage instructions

EKHBDP

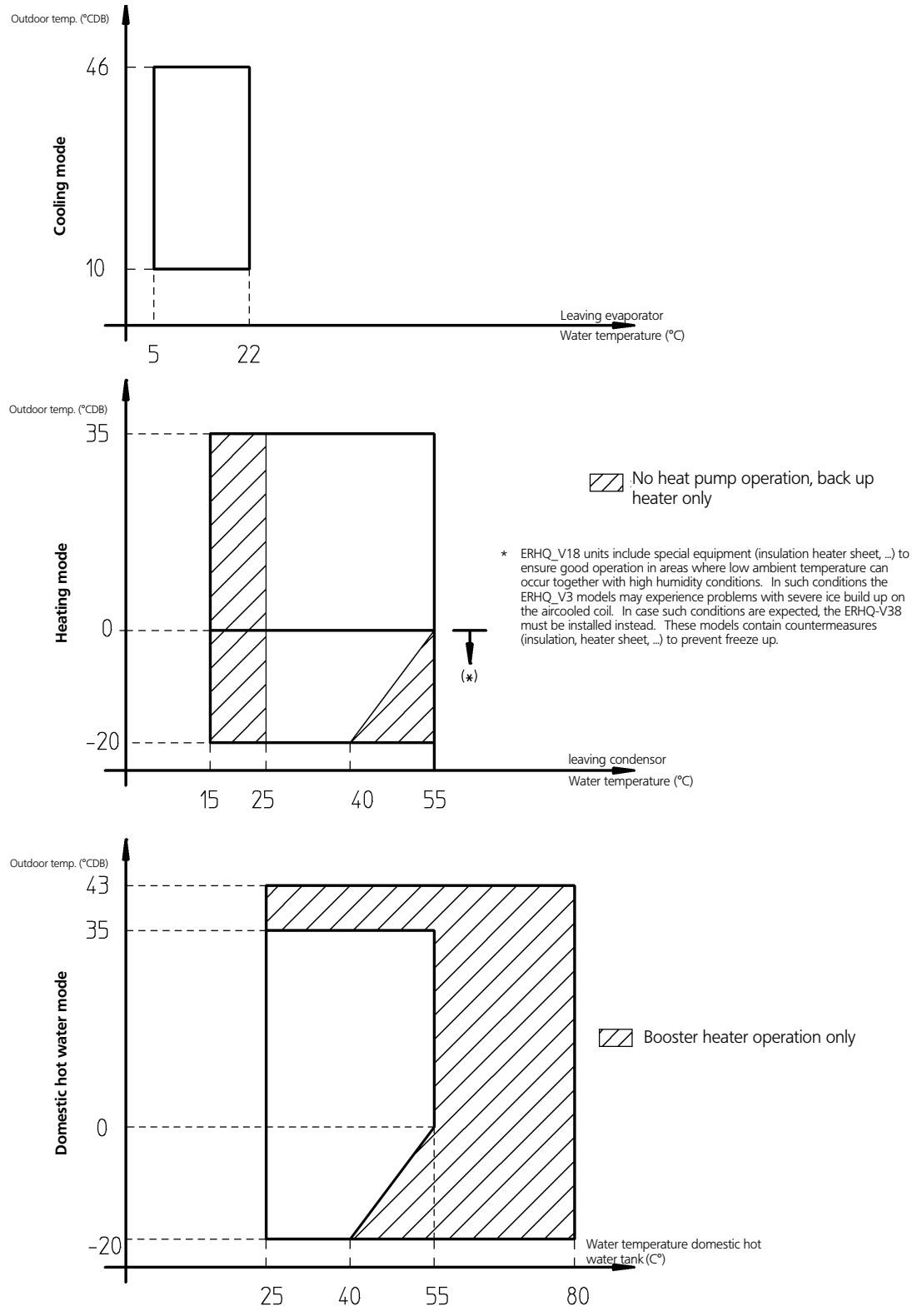


1. Refer to psychometric chart for more information.
2. If condensation is expected, installation of EKHBDP - drainpan kit must be considered.

4TW57759-3

8 Operation range

EKHBH(X)016AB

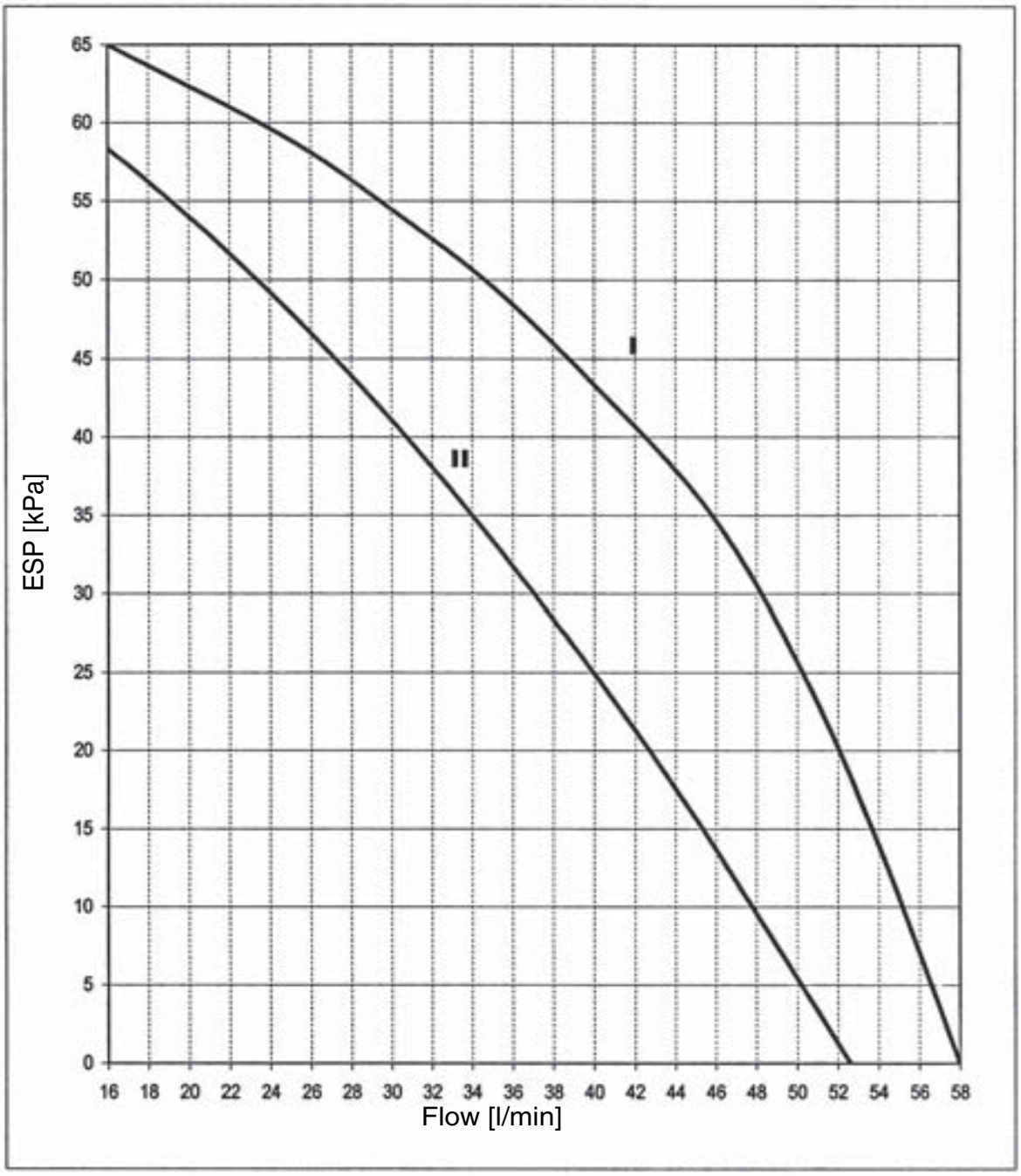


4TW57753-1B

9 Hydraulic performance

9 - 1 Static pressure drop unit

EKHBH(X)016



I high speed
II medium speed
ESP: external static pressure
Flow: waterflow through the unit

Warning:
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW57759-1

DAIKIN

EEDEN09-720

technical data

Altherma™

R-410A

Part 3/4:

EDHQ011-016AA6V3
EDHQ011-016AA6W1
EDLQ011-016AA6V3
EDLQ011-016AA6W1
EBHQ011-016AA6V3
EBHQ011-016AA6W1
EBLQ011-016AA6V3
EBLQ011-016AA6W1

altherma™

TABLE OF CONTENTS

EDHQ011-016AA6V3

1 Features

- Heating only monobloc
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EDHQ011AA6V3	EDHQ014AA6V3	EDHQ016AA6V3
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Heating PI	Nominal	kW	2.47	3.20	3.79
	COP	Nominal		4.54	4.37	4.22
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Heating PI	Nominal	kW	3.22	3.91	4.62
	COP	Nominal		3.37	3.35	3.26
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EDHQ011AA6V3	EDHQ014AA6V3	EDHQ016AA6V3
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	51	51	52
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2 Specifications

2-3 MAIN COMPONENTS				EDHQ011AA6V3	EDHQ014AA6V3	EDHQ016AA6V3
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m³/min	90	90	90
Fan	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT100G-VD		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		
Expansion vessel	Volume		l	10	10	10
	Maximum water pressure		bar	3	3	3
	Pre pressure		bar	1.0	1.0	1.0
Water filter	Diameter perforations		mm	1	1	1
	Material			Brass		
Water circuit	Piping connections		inch	G5/4 (FEMALE)		
	Piping		inch	5/4"		
	Safety valve		bar	3	3	3
	Manometer			Yes		
	Drain valve / Fill valve			yes		
	Shut off valve			yes		
	Air purge valve			yes		
	Total water volume (6)		l	5.5	5.5	5.5

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDHQ011AA6V3	EDHQ014AA6V3	EDHQ016AA6V3
Power supply compressor component	Main Power	Name		V3		
		Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Current	Minimum Ssc value	kVa	Equipment complying with EN/IEC 61000-3-12(*)		
		Recomended fuses	A	32	32	32
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6V3		
Current back-up heater	Power Supply	Phase		1~		
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Running Current	Back-up heater	A	26	26	26
Running Current	Back-up heater + booster heater	+EK*V3	A	39(26+13)		
Current back-up heater	Z-max	Back-up heater	A	0.29	0.29	0.29
		Back-up heater + booster heater	A	0.17	0.17	0.17
	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDHQ011AA6V3	EDHQ014AA6V3	EDHQ016AA6V3
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		2G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EDHQ011-016AAV3

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EDHQ011-016AA6V3

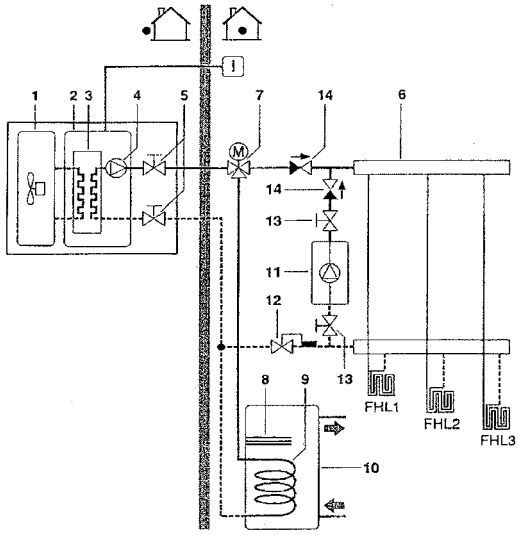
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

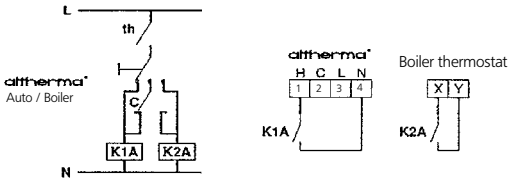
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

3TW58019-5A

4 Capacity tables

4 - 1 Heating capacity tables

EDHQ011-016AA6V3

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6V3	-20 (a)	5,86	2,17	5,51	2,37								
	-15	6,63	2,21	6,23	2,42	6,09	2,67						
	-7	8,13	2,24	7,66	2,47	7,51	2,72	7,32	3,18				
	-2	9,28	2,25	8,76	2,48	8,61	2,74	8,41	3,21	8,11	3,57		
	2	10,32	2,25	9,77	2,48	9,62	2,75	9,42	3,22	9,10	3,59	8,51	4,00
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	7,42	2,78	7,20	3,03								
	-15	8,29	2,84	8,00	3,10	7,72	3,40						
	-7	10,07	2,91	9,67	3,18	9,28	3,49	9,08	3,80				
	-2	11,46	2,94	11,00	3,21	10,54	3,54	10,29	3,85	10,13	4,26		
	2	12,75	2,95	12,23	3,23	11,72	3,56	11,43	3,88	11,25	4,30	10,73	4,75
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	8,47	3,27	8,34	3,56								
	-15	9,44	3,34	9,21	3,64	8,99	3,99						
	-7	11,44	3,43	11,08	3,74	10,73	4,11	10,53	4,47				
	-2	13,01	3,47	12,58	3,79	12,14	4,17	11,89	4,54	11,45	5,01		
	2	14,48	3,49	13,98	3,82	13,48	4,20	13,18	4,58	12,67	5,06	12,17	5,59
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6V3	-20 (a)	4,96	2,13	4,67	2,32								
	-15	5,61	2,16	5,27	2,37	5,16	2,61						
	-7	6,88	2,20	6,49	2,41	6,36	2,67	6,19	3,12				
	-2	7,70	2,16	7,27	2,38	7,15	2,63	6,98	3,08	6,73	3,43		
	2	8,57	2,16	8,11	2,38	7,99	2,64	7,82	3,09	7,56	3,45	7,06	3,84
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	6,31	2,69	6,13	2,93								
	-15	7,05	2,75	6,80	3,00	6,57	3,29						
	-7	8,57	2,82	8,23	3,08	7,89	3,38	7,72	3,68				
	-2	9,11	2,66	8,74	2,91	8,38	3,20	8,18	3,49	8,05	3,86		
	2	10,13	2,67	9,72	2,93	9,31	3,22	9,09	3,52	8,95	3,89	8,53	4,30
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	7,00	3,17	6,89	3,45								
	-15	7,80	3,24	7,61	3,53	7,43	3,87						
	-7	9,45	3,33	9,15	3,63	8,86	3,99	8,70	4,34				
	-2	9,96	3,09	9,62	3,38	9,29	3,71	9,09	4,04	8,76	4,46		
	2	11,08	3,11	10,69	3,40	10,31	3,74	10,08	4,08	9,69	4,50	9,31	4,98
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

3TW58012-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

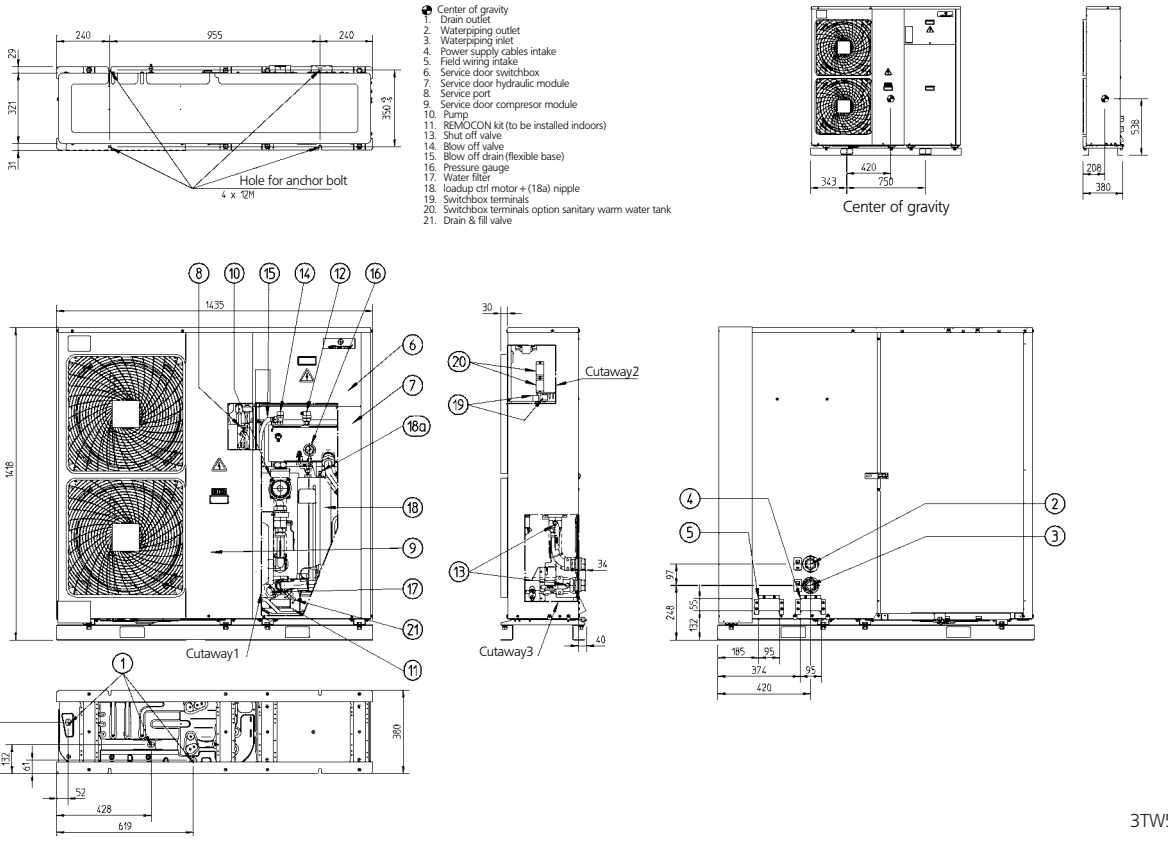
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

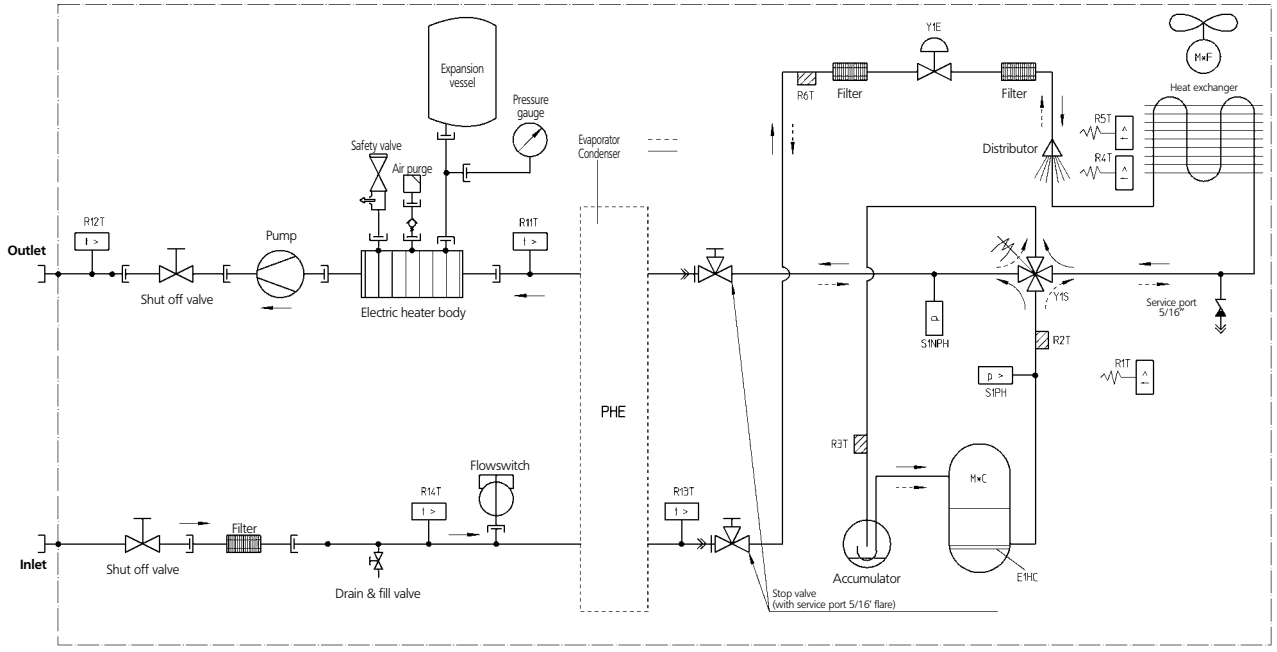
EDHQ011-016AA6V3



6 Piping diagram

6 - 1 Piping diagram

EDHQ011-016AA6V3



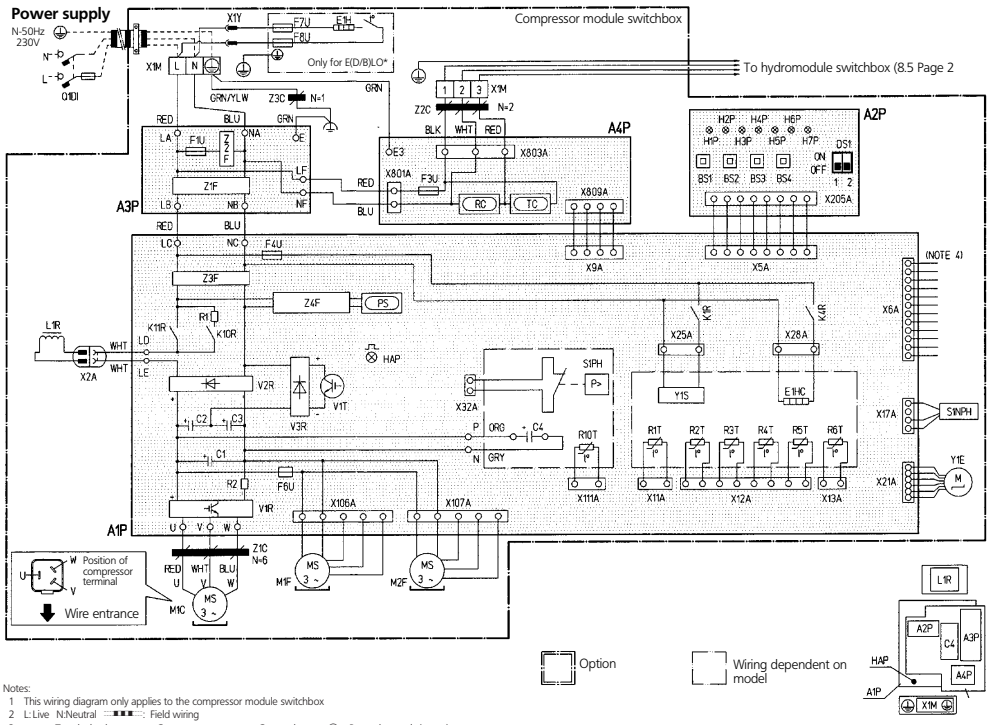
R1T	: Thermistor (Air)	Y1S	: 4-way valve		Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve		Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

3TW58015-1A

7 Wiring diagram

7 - 1 Wiring diagram

EDHQ011-016AA6V3



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
A4P	Printed circuit board
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1H	Bottomplate heater
E1HC	Crankcase heater
F1U, F3U, F4U	Fuse (T 6.3A/250V)
F6U	Fuse (T 5.0A/250V)
F7U, F8U	Fuse (F 1.0A/250V)
H1P–7P (A2P)	Light Emit. Diode (Serv. Monitor-Orange) Prepare, Test ——— Flickering Malfunction Detection – Light up
HAP (A1P)	Light emitting diode (service monitor green)
K1R	Magnetic relay (Y1S)
K4R	Magnetic relay (E1HC)
K10R	Magnetic relay
K11R	Magnetic relay
L1R	Reactor
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Field earth leakage breaker (300mA)
R1	Resistor
R2	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
RC	Signal receiver circuit
R10T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
TC	Signal transmission circuit
V1R	Power module
V2R, V3R	Diode module
V1T	IGBT
X1M	Terminal strip (Power supply)
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Z1C–Z3C	Noise filter (ferrity core)
Z1F–Z4F	Noise filter
Optional connector	
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L:Live N:Neutral ⋯: Field wiring
3 □□□ :Terminal strip ⊠ :Connector —●— :Connection ⏚ :Protective earth (screw)
—○— :Connector ⏚ :Noiseless earth —○ :Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

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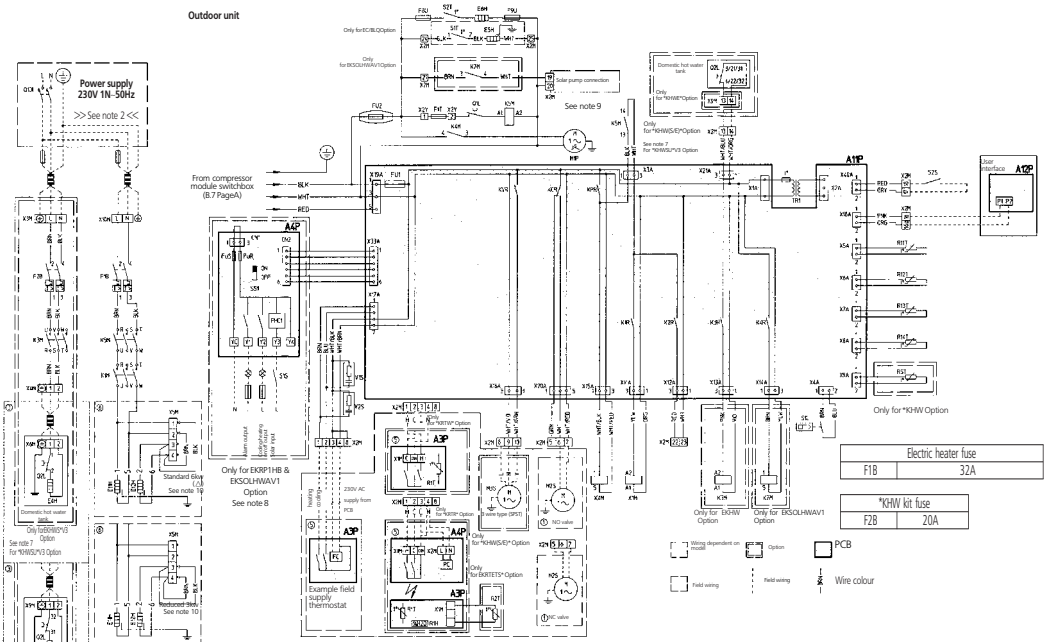
EDHQ011-016AA6V3



A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (EKRTR)	: Solar/remote alarm PCB
A4P (*KRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L	: Thermal protector 1/2Booster heater
R1H (*KRTR)	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

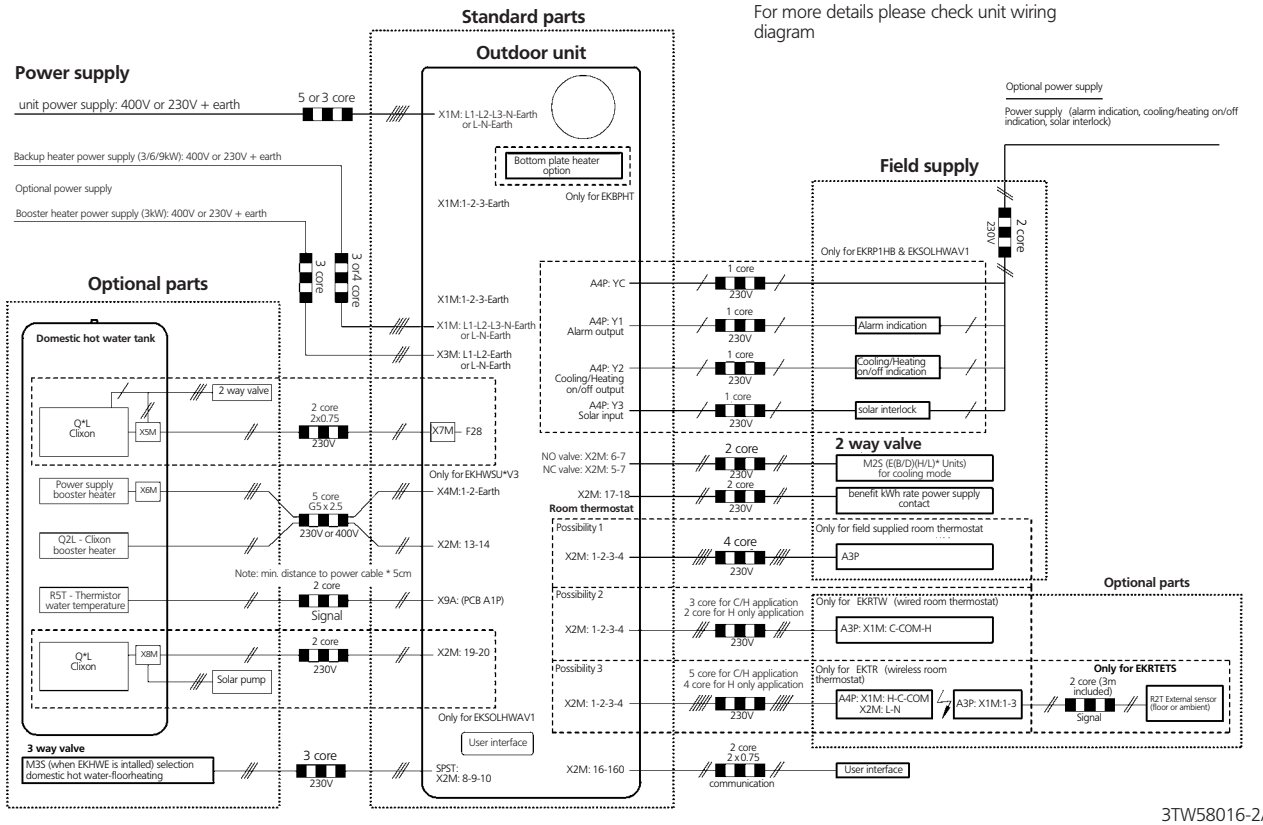
Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector —○— :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N.L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

2TW58016-1

7 Wiring diagram

7 - 2 External connection diagram

EDHQ011-016AA6V3 Electrical connection diagram Altherma

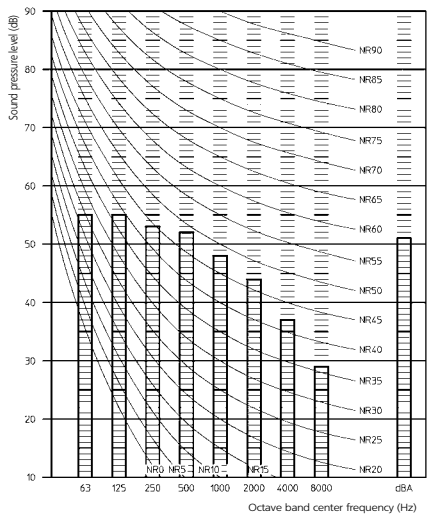


8 Sound data

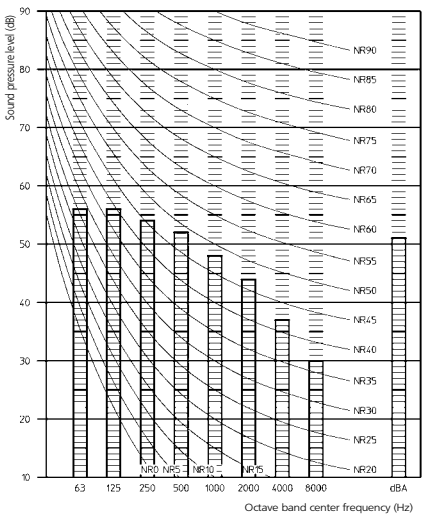
8 - 1 Sound pressure spectrum

EDHQ011-016AA6V3

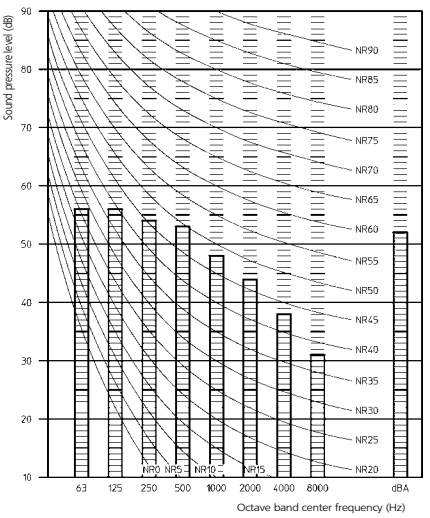
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

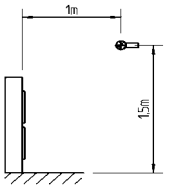


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

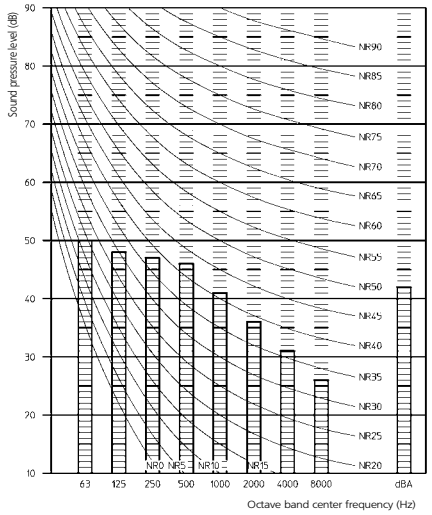
3TW58017-2

8 Sound data

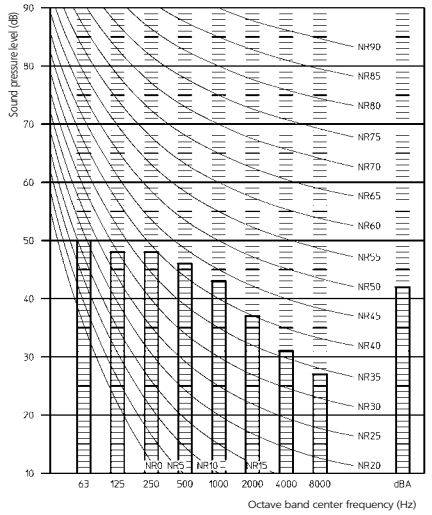
8 - 2 Sound pressure night quiet mode

EDHQ011-016AA6V3

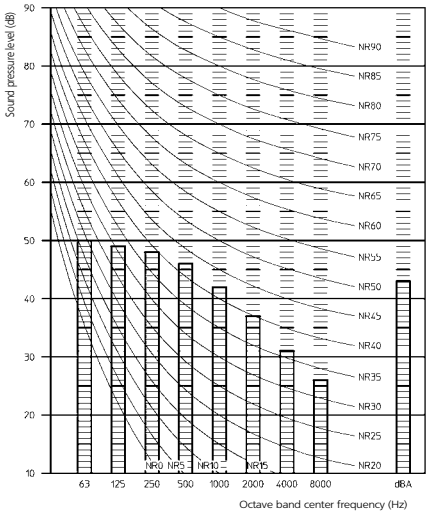
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

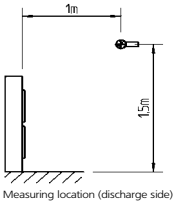


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20μPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

3TW58017-4

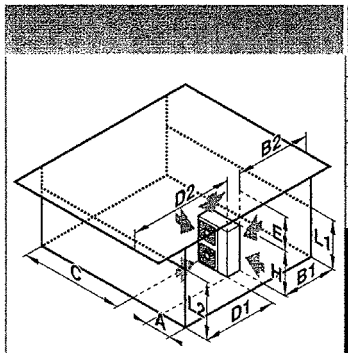
9 Installation

9 - 1 Service space

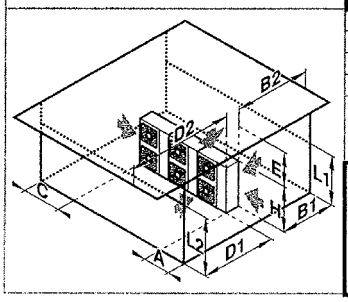
EDHQ011-016AA6V3

A. Non stacked installation

Legend Unit: mm



								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓			✓		L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓			✓						≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓			✓		L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							



Suction side obstacle

Discharge side obstacle

Left side obstacle

Right side obstacle

Top side obstacle

✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

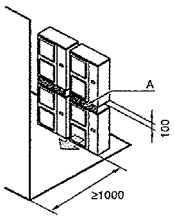
2 In these cases, only 2 units can be installed.

This situation is not allowed.

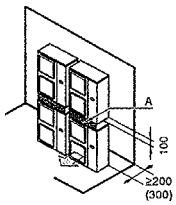
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



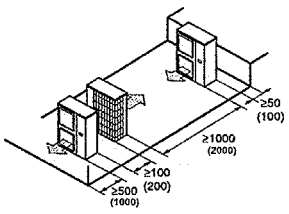
2. Obstacles exist in front of the air inlet



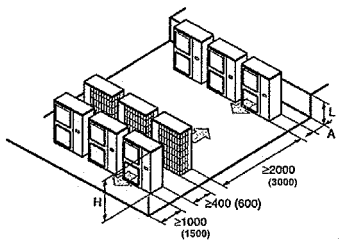
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



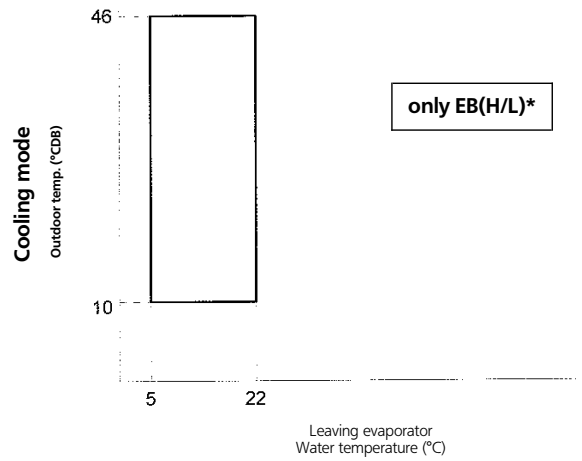
Relation of dimensions of H, A, and L are shown in the table below.

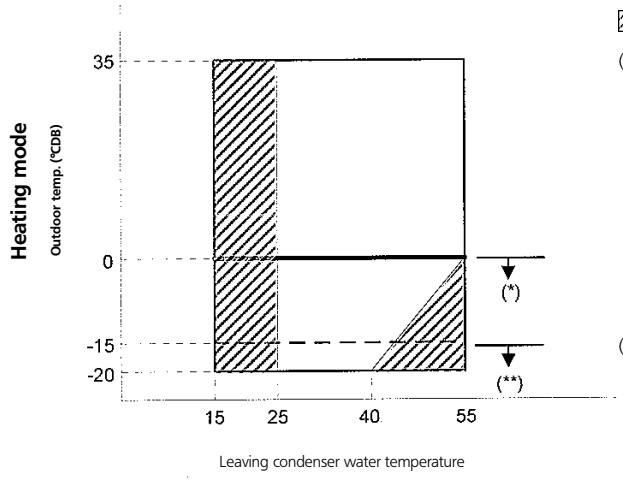
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

10 Operation range

EDHQ011-016AA6V3



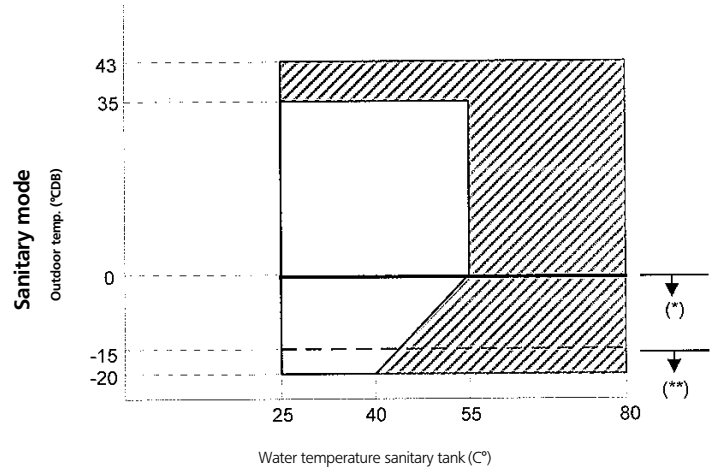


No heat pump operation, back up heater only

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

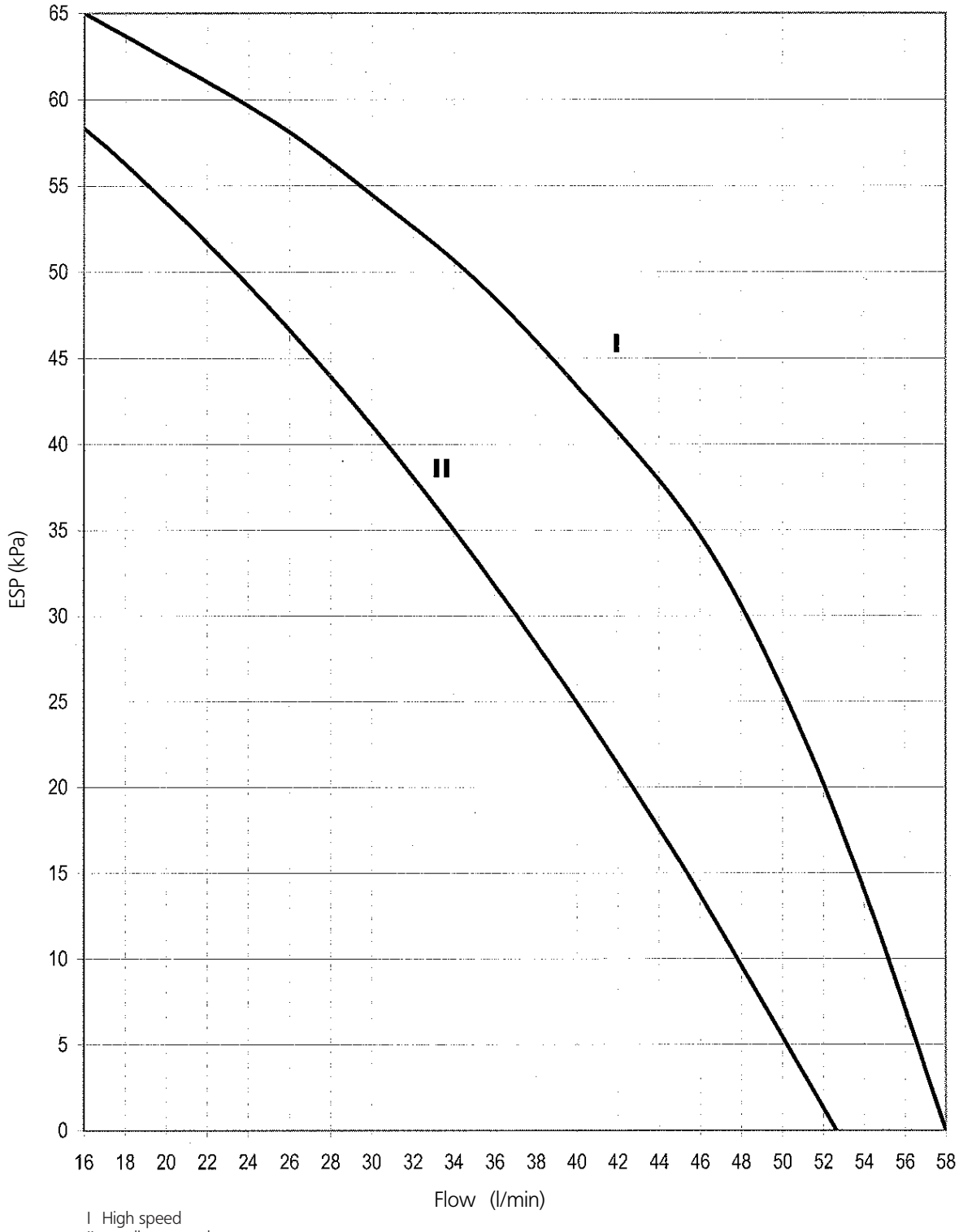
(**) only E(D/B)L*

4TW58013-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EDHQ011-016AA6V3



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EDHQ011-016AA6W1

1 Features

- Heating only monobloc
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EDHQ011AA6W1	EDHQ014AA6W1	EDHQ016AA6W1
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Heating PI	Nominal	kW	2.51	3.22	3.72
	COP	Nominal		4.46	4.35	4.30
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Heating PI	Nominal	kW	3.12	3.98	4.58
	COP	Nominal		3.48	3.29	3.29
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EDHQ011AA6W1	EDHQ014AA6W1	EDHQ016AA6W1
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Pressure	dBA	49	51	53
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2 Specifications

2-3 MAIN COMPONENTS				EDHQ011AA6W1	EDHQ014AA6W1	EDHQ016AA6W1
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT1G-VDYR@S		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		
Expansion vessel	Volume		l	10	10	10
	Maximum water pressure		bar	3	3	3
	Pre pressure		bar	1.0	1.0	1.0
Water filter	Diameter perforations		mm	1	1	1
	Material			Brass		
Water circuit	Piping connections		inch	G5/4 (FEMALE)		
	Piping		inch	5/4"		
	Safety valve		bar	3	3	3
	Manometer			Yes		
	Drain valve / Fill valve			yes		
	Shut off valve			yes		
	Air purge valve			yes		
	Total water volume (6)		l	5.5	5.5	5.5

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDHQ011AA6W1	EDHQ014AA6W1	EDHQ016AA6W1
Power supply compressor component	Main Power	Name		W1		
		Phase		3N~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Heating (A)	A	5.8	5.8	5.8
	Maximum running current	Heating	A	14	14	14
Power supply compressor component	Current	Recomended fuses	A	20	20	20
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6W1		
Current back-up heater	Power Supply	Phase		3~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Running Current	Back-up heater	A	8.7	8.7	8.7
Running Current	Back-up heater + booster heater	+EK*V3	A	21.7(8.7+13)		
		+EK*Z2	A	16.2(8.7+7.5)		
Current back-up heater	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		
		+EK*Z2	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDHQ011AA6W1	EDHQ014AA6W1	EDHQ016AA6W1
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EDHQ011-016AA6W1

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EDHQ011-016AA6W1

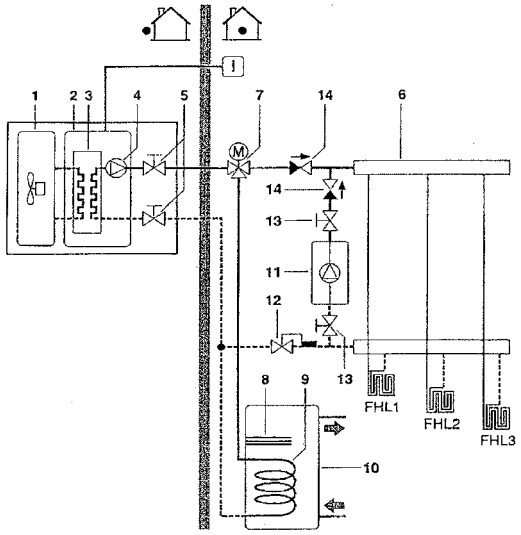
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

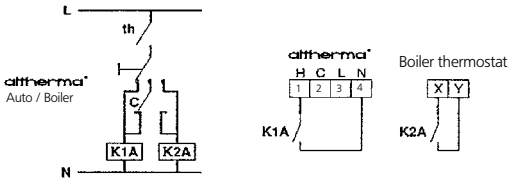
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

3TW58019-5A

4 Capacity tables

4 - 1 Heating capacity tables

EDHQ011-016AA6W1

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6W1	-20 (a)	5,86	2,21	5,51	2,42	5,39	2,66	5,25	2,95				
	-15	6,63	2,25	6,23	2,46	6,09	2,71	5,92	3,01	5,68	3,34		
	-7	8,13	2,29	7,66	2,51	7,51	2,77	7,32	3,08	7,03	3,43	6,53	3,81
	-2	9,28	2,29	8,76	2,52	8,61	2,79	8,41	3,11	8,11	3,46	7,55	3,85
	2	10,32	2,29	9,77	2,52	9,62	2,80	9,42	3,12	9,10	3,48	8,51	3,87
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	7,42	2,79	7,20	3,04	7,00	3,33	5,49	3,68				
	-15	8,29	2,85	8,00	3,11	7,72	3,41	7,60	3,76	7,57	4,16		
	-7	10,07	2,92	9,67	3,19	9,28	3,51	9,08	3,87	8,97	4,28	8,58	4,73
	-2	11,46	2,95	11,00	3,23	10,54	3,55	10,29	3,92	10,15	4,34	9,69	4,80
	2	12,75	2,96	12,23	3,25	11,72	3,57	11,43	3,96	11,27	4,38	10,75	4,84
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	8,47	3,20	8,34	3,49	8,22	3,83	6,50	4,21				
	-15	9,44	3,28	9,21	3,57	8,99	3,92	8,91	4,31	8,69	4,75		
	-7	11,44	3,37	11,08	3,67	10,73	4,03	10,53	4,43	10,17	4,90	9,81	5,41
	-2	13,01	3,41	12,58	3,72	12,14	4,09	11,89	4,50	11,43	4,97	11,00	5,49
	2	14,48	3,43	13,98	3,75	13,48	4,12	13,18	4,54	12,65	5,01	12,15	5,54
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6W1	-20 (a)	4,96	2,16	4,67	2,37	4,57	2,60	4,45	2,89				
	-15	5,61	2,20	5,27	2,41	5,16	2,66	5,01	2,95	4,81	3,27		
	-7	6,88	2,24	6,49	2,46	6,36	2,72	6,19	3,02	5,95	3,35	5,53	3,73
	-2	7,70	2,20	7,27	2,42	7,15	2,68	6,98	2,98	6,73	3,32	6,27	3,70
	2	8,57	2,19	8,11	2,42	7,99	2,69	7,82	3,00	7,56	3,34	7,06	3,72
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	6,31	2,70	6,13	2,94	5,96	3,23	4,67	3,56				
	-15	7,05	2,76	6,80	3,01	6,57	3,30	6,46	3,64	6,44	4,02		
	-7	8,57	2,83	8,23	3,09	7,89	3,40	7,72	3,75	7,63	4,14	7,30	4,58
	-2	9,11	2,67	8,74	2,92	8,38	3,21	8,18	3,55	8,07	3,93	7,70	4,34
	2	10,13	2,68	9,72	2,94	9,31	3,24	9,09	3,58	8,96	3,96	8,55	4,38
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	7,00	3,11	6,89	3,39	6,79	3,71	5,37	4,08				
	-15	7,80	3,18	7,61	3,46	7,43	3,80	7,37	4,18	7,18	4,61		
	-7	9,45	3,26	9,15	3,56	8,86	3,91	8,70	4,30	8,40	4,75	8,11	5,25
	-2	9,96	3,03	9,62	3,31	9,29	3,64	9,09	4,00	8,75	4,42	8,41	4,88
	2	11,08	3,05	10,69	3,34	10,31	3,67	10,08	4,04	9,68	4,46	9,29	4,93
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

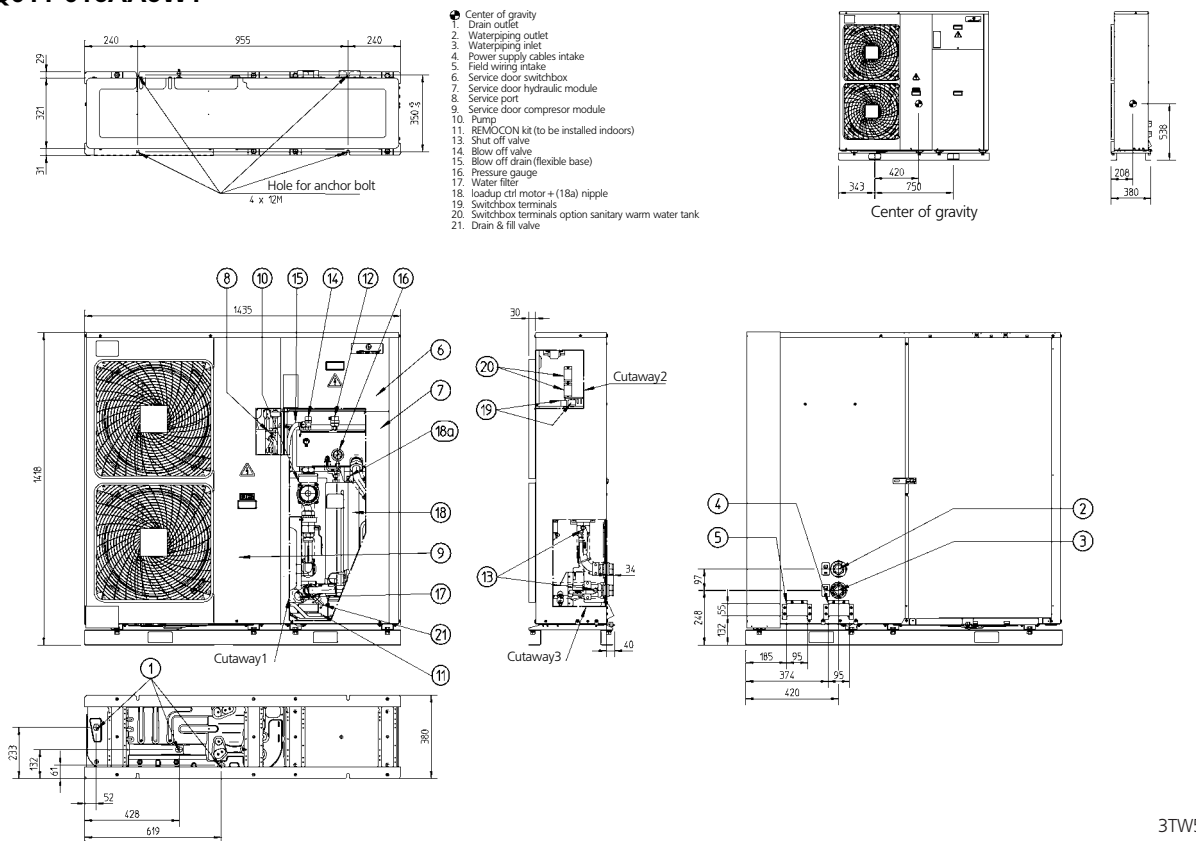
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

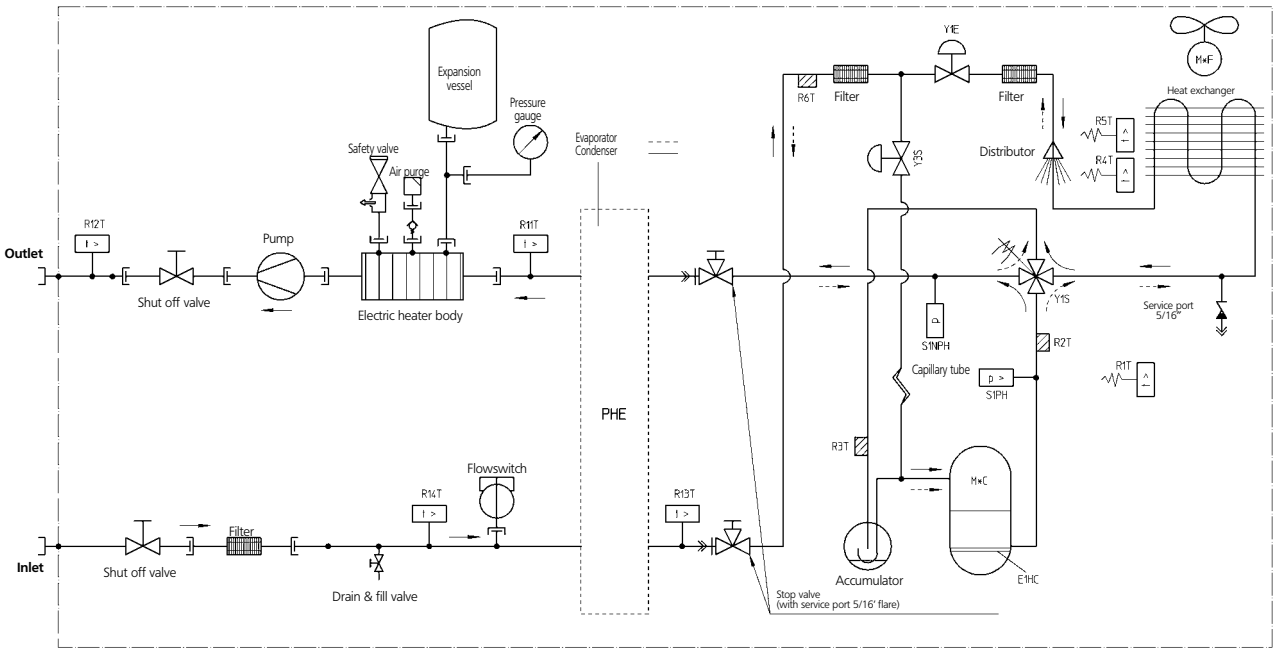
EDHQ011-016AA6W1



6 Piping diagram

6 - 1 Piping diagram

EDLH011-016AA6W1



R1T	: Thermistor (Air)	Y1S	: 4-way valve	——►	Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve	- - - ►	Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

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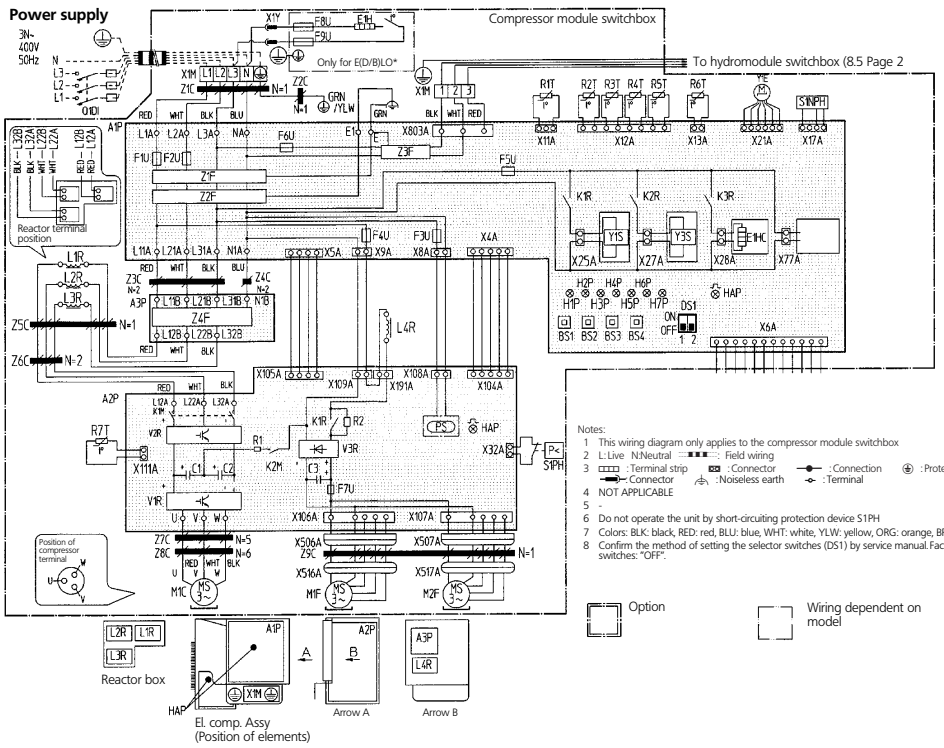
7 Wiring diagram

7 - 1 Wiring diagram

EDHQ011-016AA6W1



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (T 31,5A/250V)
F2U	Fuse (T 31,5A/250V)
F3U	Fuse (T 6,3A/250V)
F4U	Fuse (T 6,3A/250V)
F5U	Fuse (T 6,3A/250V)
F6U	Fuse (T 6,3A/250V)
F7U	Fuse (T 5,0A/250V)
F8U, F9U	Fuse (T 1,0A/250V)
H1P–7P (A1P)	Pilotlamp (service monitor - orange)
HAP (A1P)	Pilotlamp (service monitor - green)
HAP (A2P)	Pilotlamp (service monitor - green)
K1M–K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R–L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Earth leakage protector
R1–R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (Heat exchanger middle)
R6T	Thermistor (Liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
V1R, V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C–Z9C	Noise filter
Z1F–Z4F	Noise filter
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral Field wiring
3 Terminal strip Connector Connection Protective earth (screw)
Connector Noiseless earth Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

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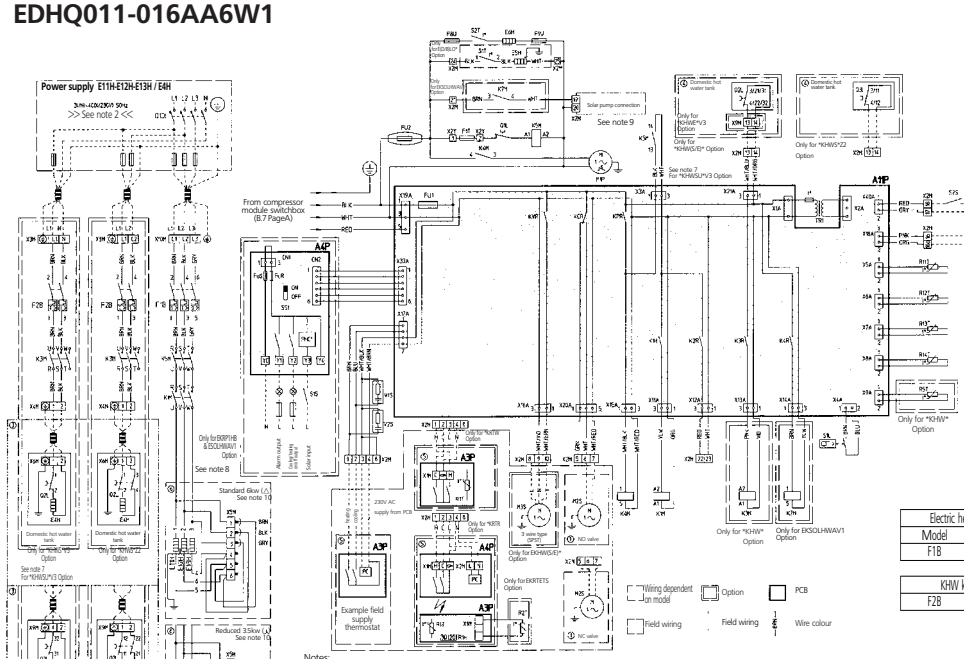


A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (*KRTR)	: Solar/remote alarm PCB
A4P (EKRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input PCB
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L/Q3L	: Thermal protector 1/2Booster heater
R1H (*KRTR)	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

Electric heater fuse	
Model	6WN
F1B	16A

KHW kit fuse	
F2B	20A

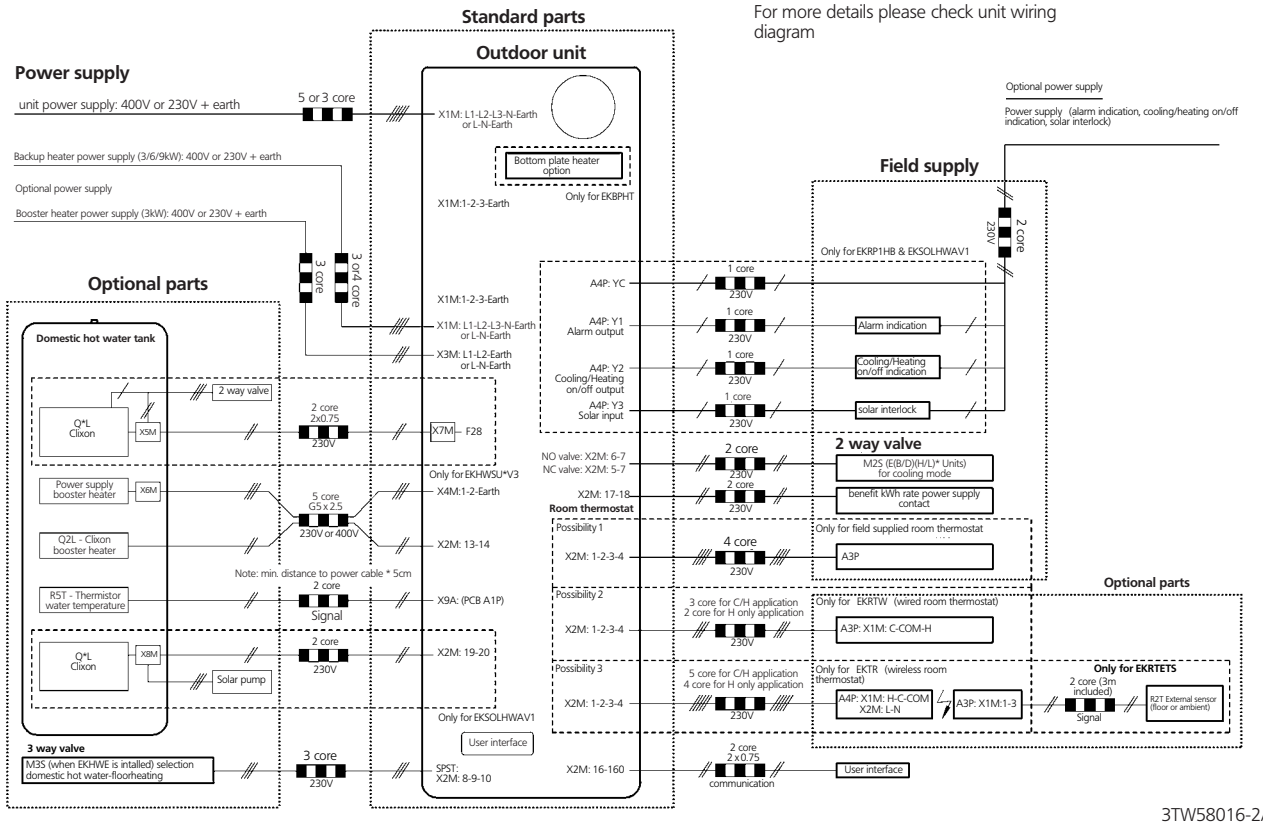
Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N,L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

2TW58136-1

7 Wiring diagram

7 - 2 External connection diagram

EDHQ011-016AA6W1 Electrical connection diagram Altherma

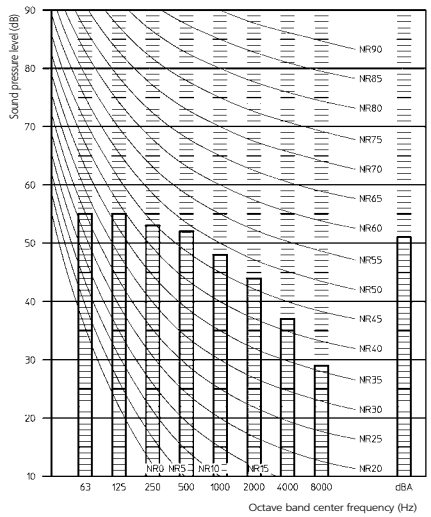


8 Sound data

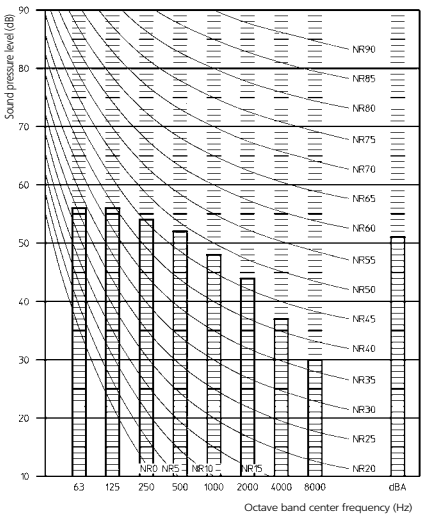
8 - 1 Sound pressure spectrum

EDHQ011-016AA6W1

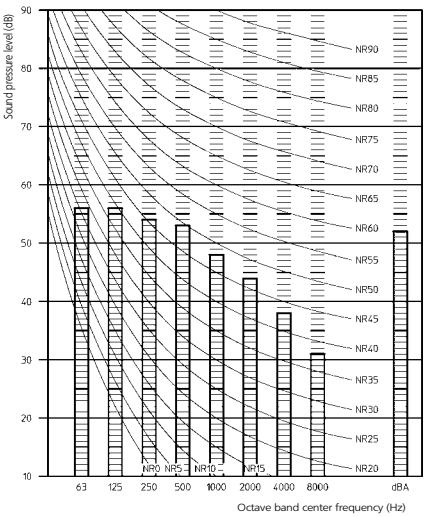
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

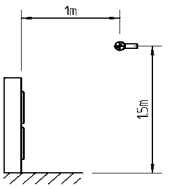


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

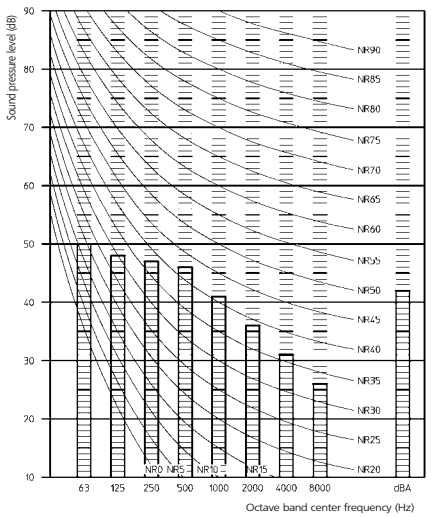
3TW58017-2

8 Sound data

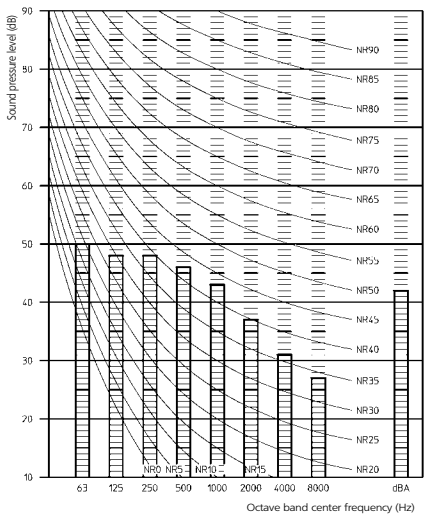
8 - 2 Sound pressure night quiet mode

EDHQ011-016AA6W1

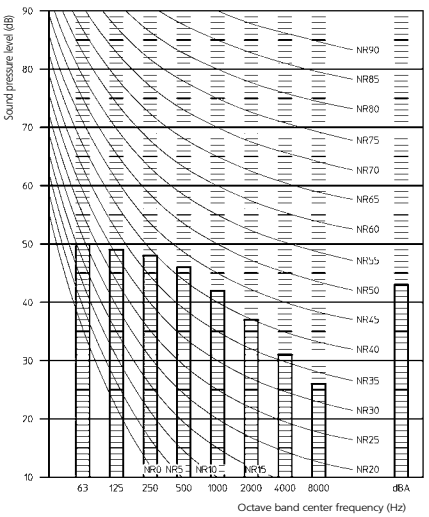
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

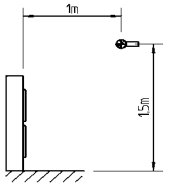


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

3TW58017-4

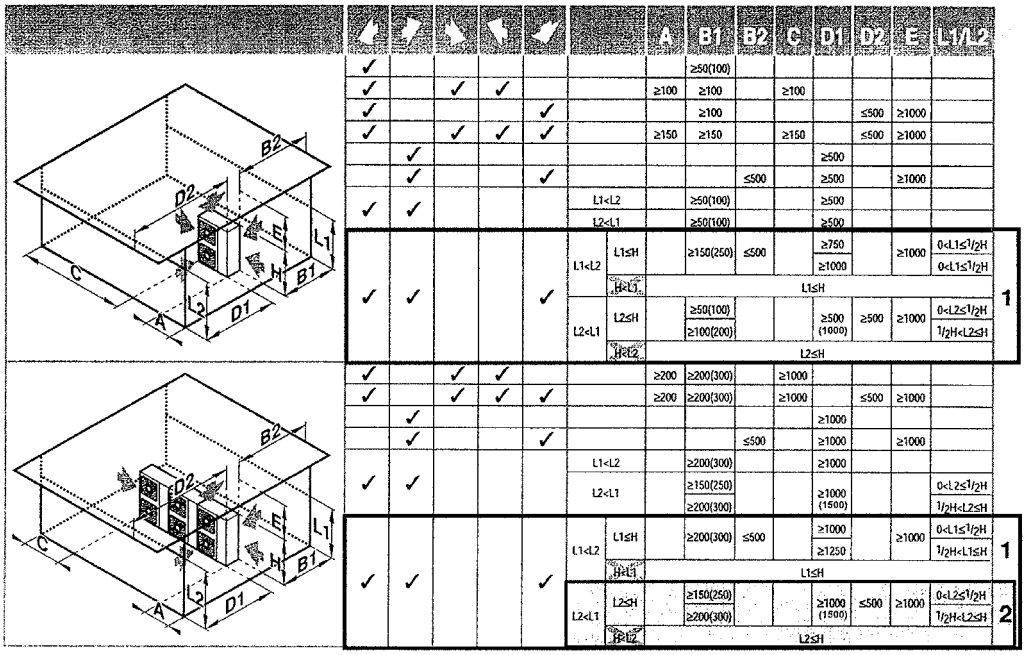
9 Installation

9 - 1 Service space

EDHQ011-016AA6W1

A. Non stacked installation

Legend Unit: mm



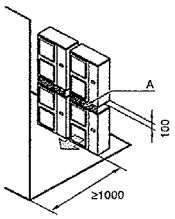
								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓			✓		L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓			✓						≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓			✓		L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present
- 1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.
- 2 In these cases, only 2 units can be installed.
- This situation is not allowed.

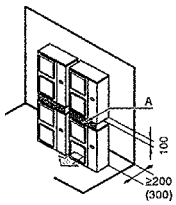
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



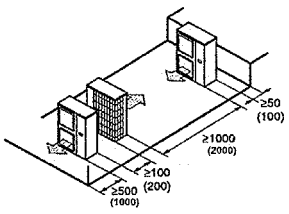
2. Obstacles exist in front of the air inlet



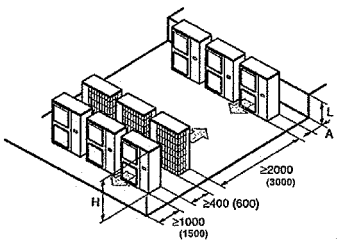
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



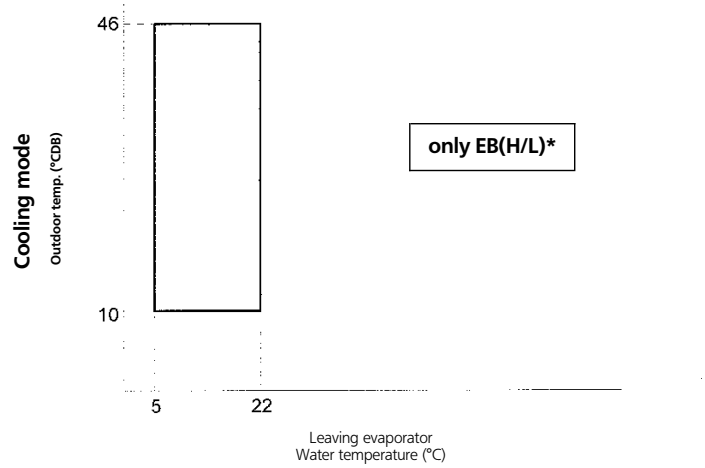
Relation of dimensions of H, A, and L are shown in the table below.

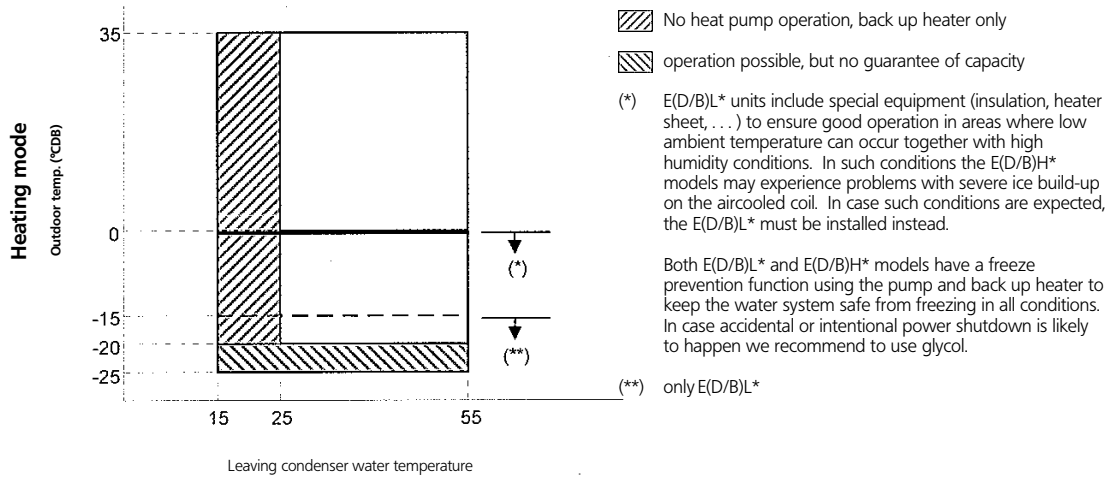
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

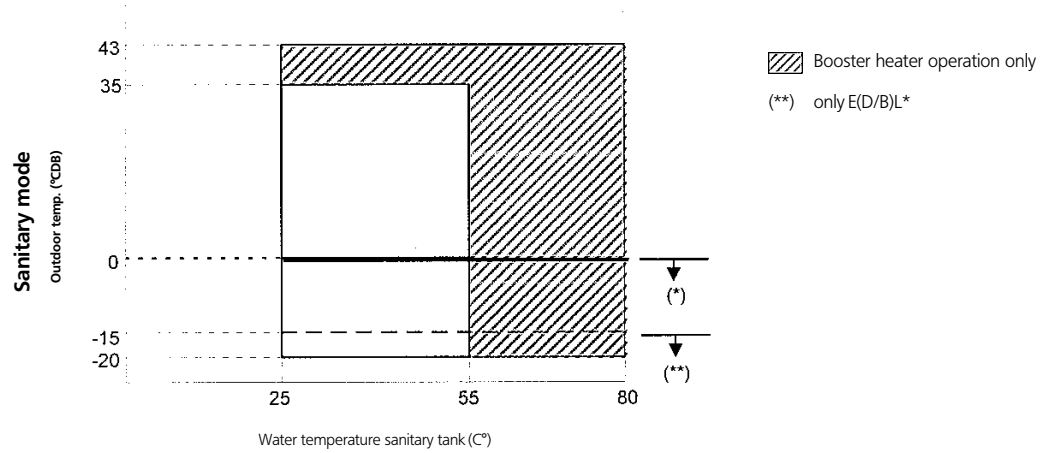
3TW26739-4

10 Operation range

EDHQ011-016AA6W1





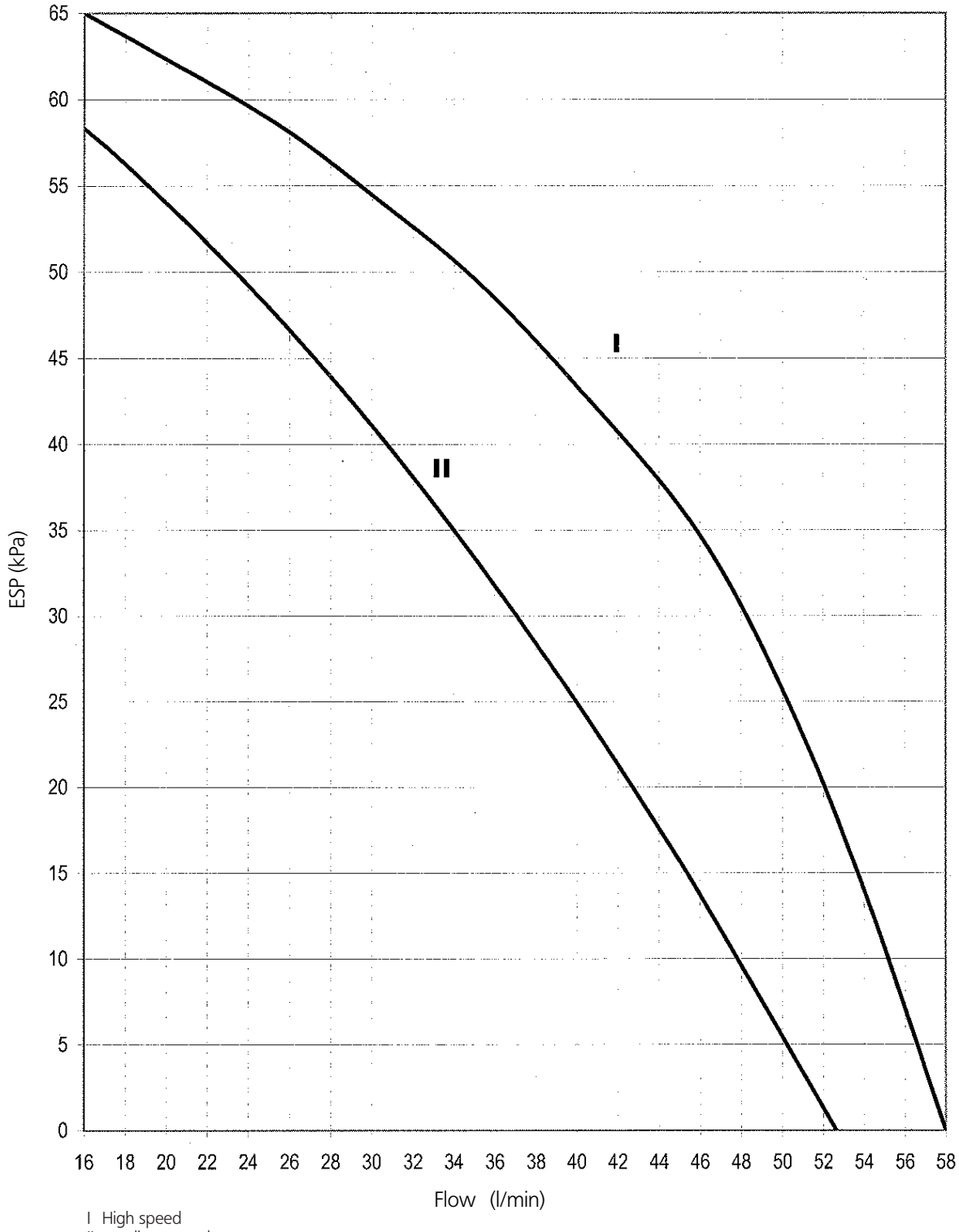


4TW58133-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EDHQ011-016AA6W1



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EDLQ011-016AA6V3

1 Features

- Heating only monobloc with bottom plate heater
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EDLQ011AA6V3	EDLQ014AA6V3	EDLQ016AA6V3
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Heating PI	Nominal	kW	2.47	3.20	3.79
	COP	Nominal		4.54	4.37	4.22
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Heating PI	Nominal	kW	3.22	3.91	4.62
	COP	Nominal		3.37	3.35	3.26
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EDLQ011AA6V3	EDLQ014AA6V3	EDLQ016AA6V3
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	51	51	52
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2 Specifications

2-3 MAIN COMPONENTS				EDLQ011AA6V3	EDLQ014AA6V3	EDLQ016AA6V3
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m³/min	90	90	90
Fan	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT100G-VD		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		
Expansion vessel	Volume		l	10	10	10
	Maximum water pressure		bar	3	3	3
	Pre pressure		bar	1.0	1.0	1.0
Water filter	Diameter perforations		mm	1	1	1
	Material			Brass		
Water circuit	Piping connections		inch	G5/4 (FEMALE)		
	Piping		inch	5/4"		
	Safety valve		bar	3	3	3
	Manometer			Yes		
	Drain valve / Fill valve			yes		
	Shut off valve			yes		
	Air purge valve			yes		
	Total water volume (6)		l	5.5	5.5	5.5

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDLQ011AA6V3	EDLQ014AA6V3	EDLQ016AA6V3
Power supply compressor component	Main Power	Name		V3		
		Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Current	Minimum Ssc value	kVa	Equipment complying with EN/IEC 61000-3-12(*)		
		Recomended fuses	A	32	32	32
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6V3		
Current back-up heater	Power Supply	Phase		1~		
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Running Current	Back-up heater	A	26	26	26
Running Current	Back-up heater + booster heater	+EK*V3	A	39(26+13)		
Current back-up heater	Z-max	Back-up heater	A	0.29	0.29	0.29
		Back-up heater + booster heater	A	0.17	0.17	0.17
	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDLQ011AA6V3	EDLQ014AA6V3	EDLQ016AA6V3
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		2G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EDLQ011-016AAV3

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EDLQ011-016AA6V3

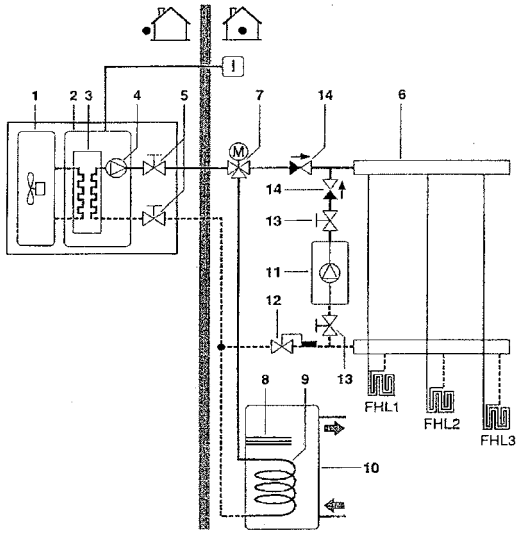
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

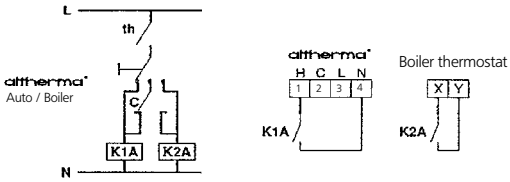
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EDLQ011-016AA6V3

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6V3	-20 (a)	5,86	2,17	5,51	2,37								
	-15	6,63	2,21	6,23	2,42	6,09	2,67						
	-7	8,13	2,24	7,66	2,47	7,51	2,72	7,32	3,18				
	-2	9,28	2,25	8,76	2,48	8,61	2,74	8,41	3,21	8,11	3,57		
	2	10,32	2,25	9,77	2,48	9,62	2,75	9,42	3,22	9,10	3,59	8,51	4,00
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	7,42	2,78	7,20	3,03								
	-15	8,29	2,84	8,00	3,10	7,72	3,40						
	-7	10,07	2,91	9,67	3,18	9,28	3,49	9,08	3,80				
	-2	11,46	2,94	11,00	3,21	10,54	3,54	10,29	3,85	10,13	4,26		
	2	12,75	2,95	12,23	3,23	11,72	3,56	11,43	3,88	11,25	4,30	10,73	4,75
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	8,47	3,27	8,34	3,56								
	-15	9,44	3,34	9,21	3,64	8,99	3,99						
	-7	11,44	3,43	11,08	3,74	10,73	4,11	10,53	4,47				
	-2	13,01	3,47	12,58	3,79	12,14	4,17	11,89	4,54	11,45	5,01		
	2	14,48	3,49	13,98	3,82	13,48	4,20	13,18	4,58	12,67	5,06	12,17	5,59
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6V3	-20 (a)	4,96	2,13	4,67	2,32								
	-15	5,61	2,16	5,27	2,37	5,16	2,61						
	-7	6,88	2,20	6,49	2,41	6,36	2,67	6,19	3,12				
	-2	7,70	2,16	7,27	2,38	7,15	2,63	6,98	3,08	6,73	3,43		
	2	8,57	2,16	8,11	2,38	7,99	2,64	7,82	3,09	7,56	3,45	7,06	3,84
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	6,31	2,69	6,13	2,93								
	-15	7,05	2,75	6,80	3,00	6,57	3,29						
	-7	8,57	2,82	8,23	3,08	7,89	3,38	7,72	3,68				
	-2	9,11	2,66	8,74	2,91	8,38	3,20	8,18	3,49	8,05	3,86		
	2	10,13	2,67	9,72	2,93	9,31	3,22	9,09	3,52	8,95	3,89	8,53	4,30
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	7,00	3,17	6,89	3,45								
	-15	7,80	3,24	7,61	3,53	7,43	3,87						
	-7	9,45	3,33	9,15	3,63	8,86	3,99	8,70	4,34				
	-2	9,96	3,09	9,62	3,38	9,29	3,71	9,09	4,04	8,76	4,46		
	2	11,08	3,11	10,69	3,40	10,31	3,74	10,08	4,08	9,69	4,50	9,31	4,98
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

3TW58012-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

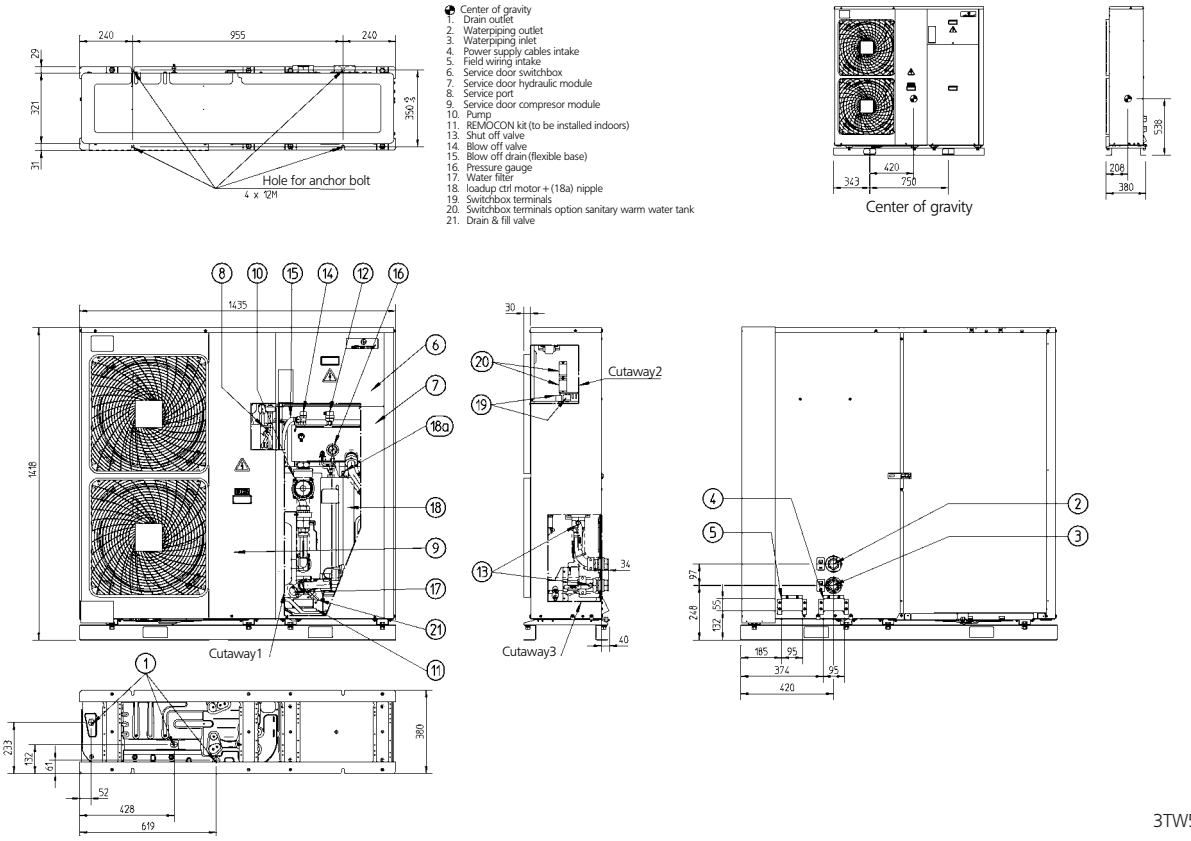
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

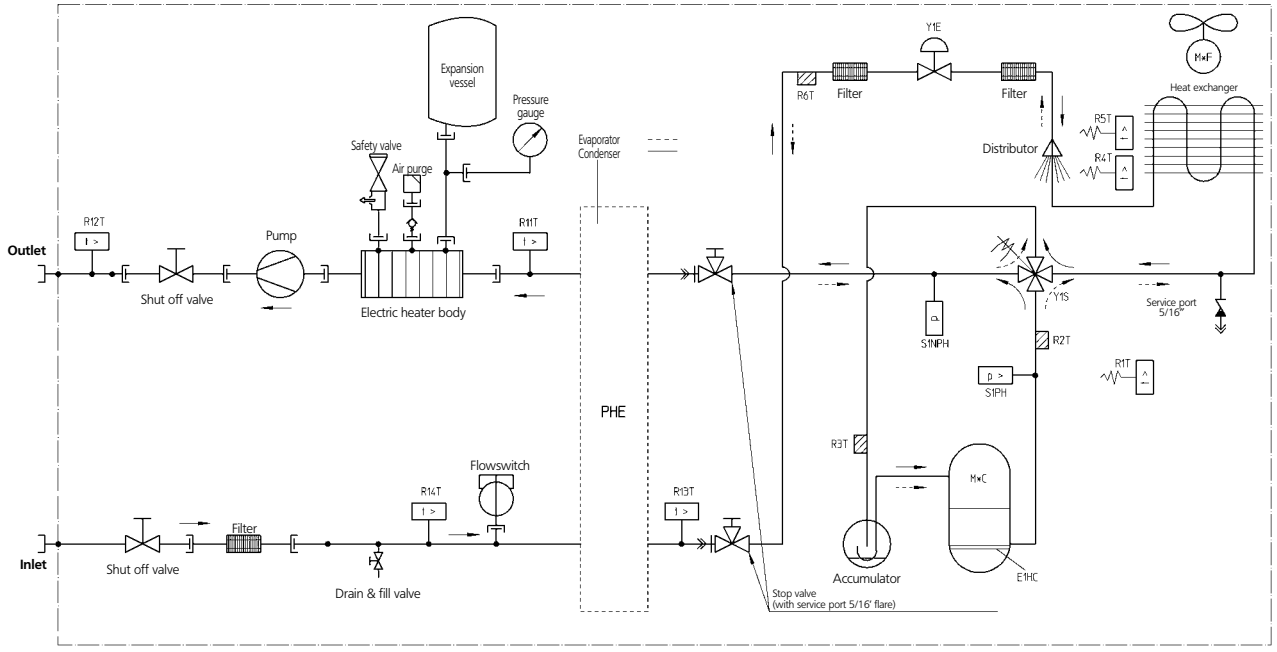
EDLQ011-016AA6V3



6 Piping diagram

6 - 1 Piping diagram

EDLQ011-016AA6V3



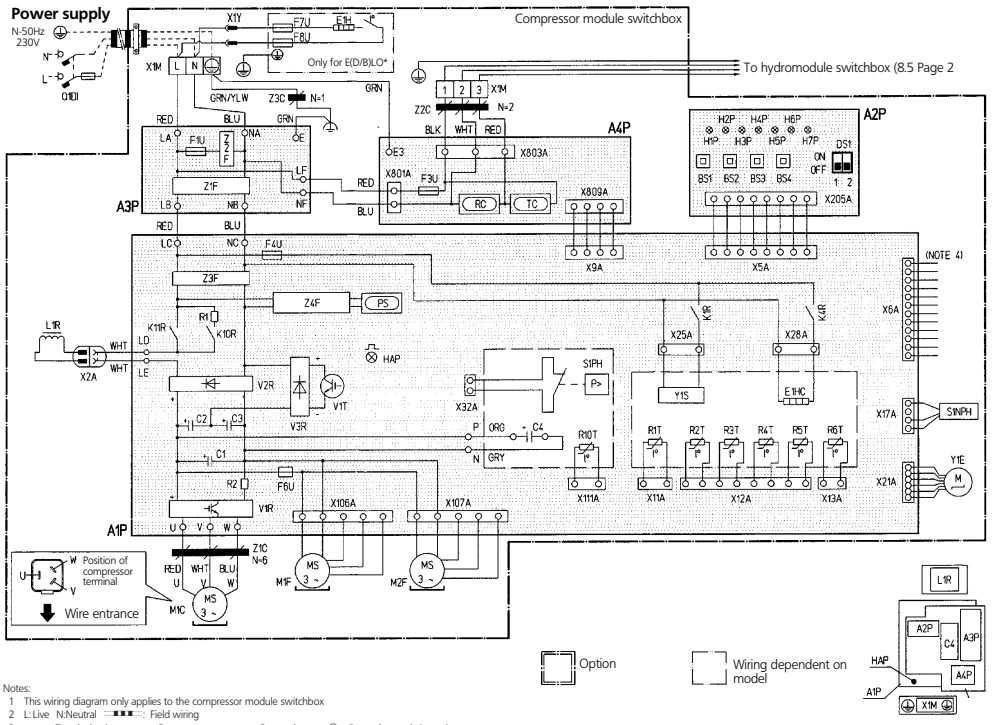
R1T	: Thermistor (Air)	Y1S	: 4-way valve	——→	Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve	- - - - →	Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

3TW58015-1A

7 Wiring diagram

7 - 1 Wiring diagram

EDLQ011-016AA6V3



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
A4P	Printed circuit board
BS1~BS4	Push button switch
C1~C4	Capacitor
DS1	DIP switch
E1H	Bottomplate heater
E1HC	Crankcase heater
F1U, F3U, F4U	Fuse (T 6.3A/250V)
F6U	Fuse (T 5.0A/250V)
F7U, F8U	Fuse (F 1.0A/250V)
H1P~7P (A2P)	Light Emit. Diode (Serv. Monitor-Orange) Prepare, Test ——— Flickering Malfunction Detection ~ Light up
HAP (A1P)	Light emitting diode (service monitor green)
K1R	Magnetic relay (Y1S)
K4R	Magnetic relay (E1HC)
K10R	Magnetic relay
K11R	Magnetic relay
L1R	Reactor
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Field earth leakage breaker (300mA)
R1	Resistor
R2	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
RC	Signal receiver circuit
R10T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
TC	Signal transmission circuit
V1R	Power module
V2R, V3R	Diode module
V1T	IGBT
X1M	Terminal strip (Power supply)
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Z1C~Z3C	Noise filter (ferrity core)
Z1F~Z4F	Noise filter
Optional connector	
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L:Live N:Neutral ⋯: Field wiring
3 □□□ :Terminal strip ⊠ :Connector ●—● :Connection ⏚ :Protective earth (screw)
—●— :Connector ⏚ :Noiseless earth —○— :Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

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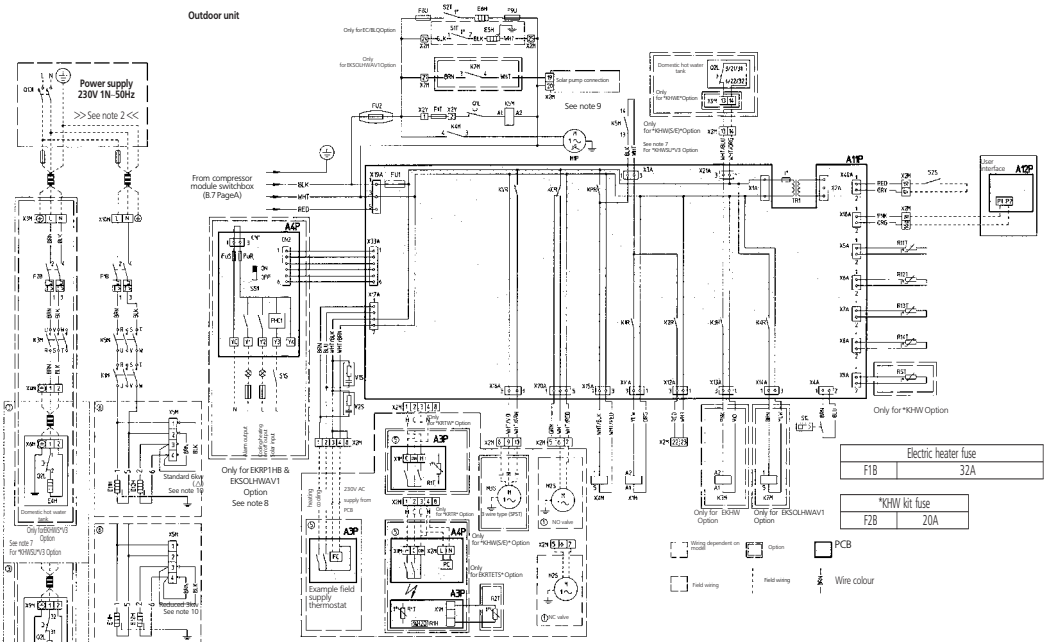
EDLQ011-016AA6V3



A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (EKRTR)	: Solar/remote alarm PCB
A4P (*KRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L	: Thermal protector 1/2Booster heater
R1H (*KRTR)	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

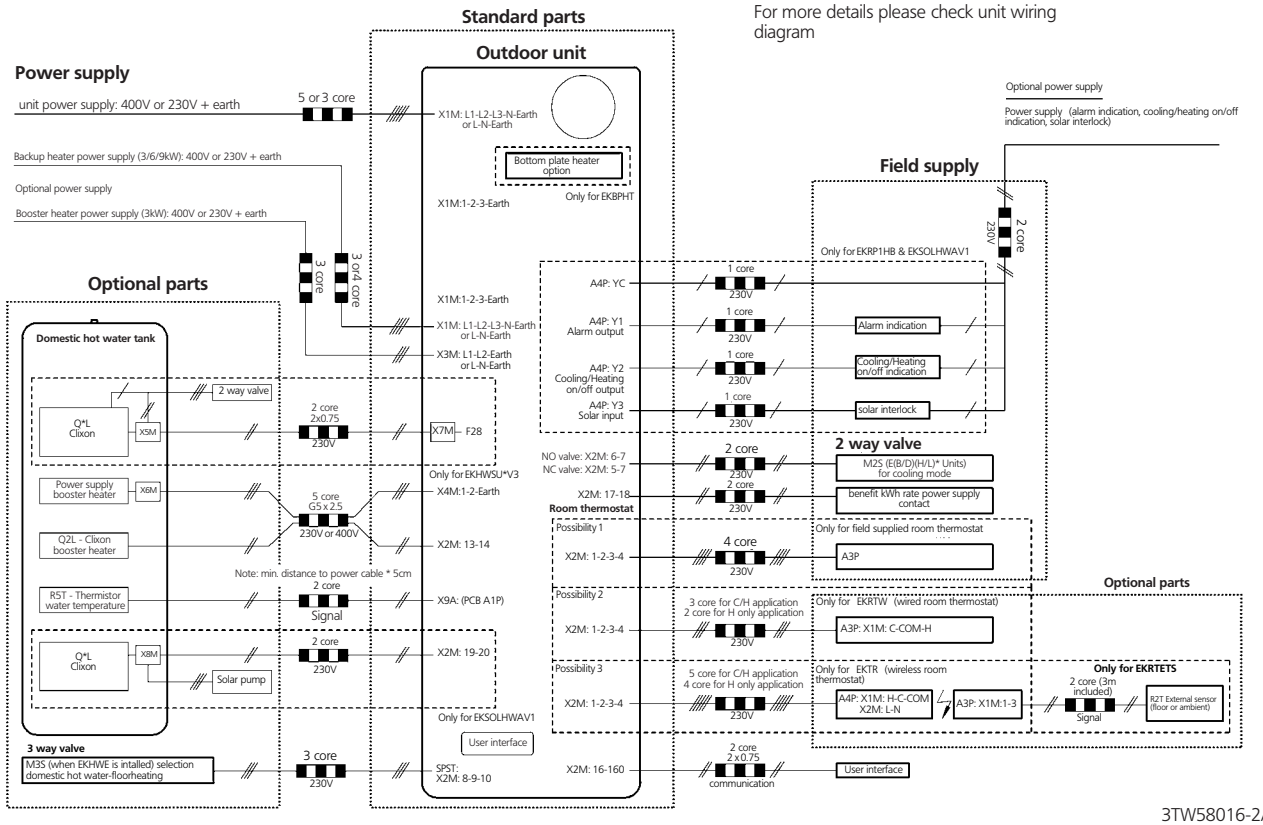
Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 ═□□═Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 □□□ :Terminal strip ⊠ :Connector —○— :Terminal ⏚ :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N.L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

2TW58016-1

7 Wiring diagram

7 - 2 External connection diagram

EDLQ011-016AA6V3 Electrical connection diagram Altherma

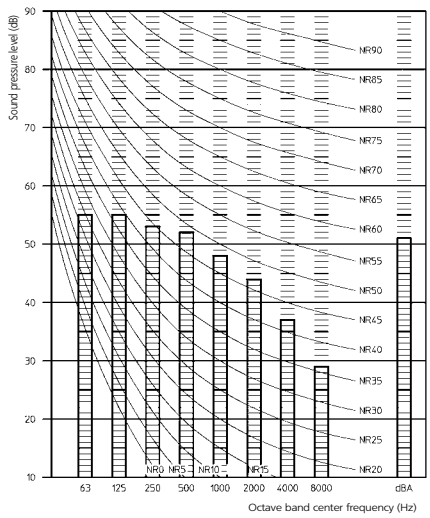


8 Sound data

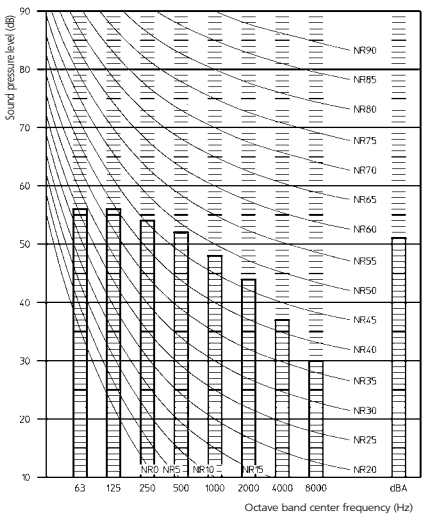
8 - 1 Sound pressure spectrum

EDLQ011-016AA6V3

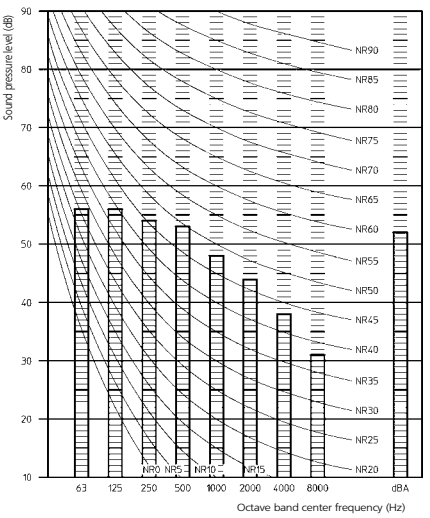
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

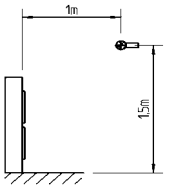


E(D/B)(H/L)Q016* HEATING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

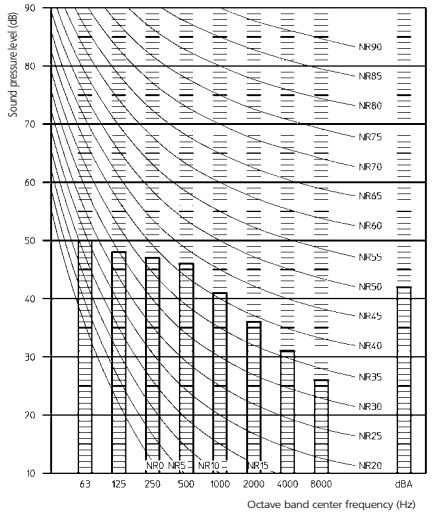
3TW58017-2

8 Sound data

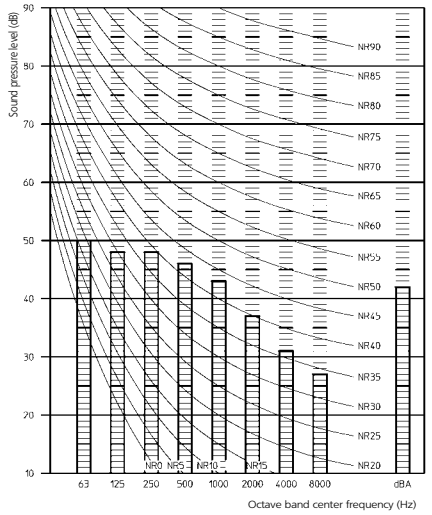
8 - 2 Sound pressure night quiet mode

EDLQ011-016AA6V3

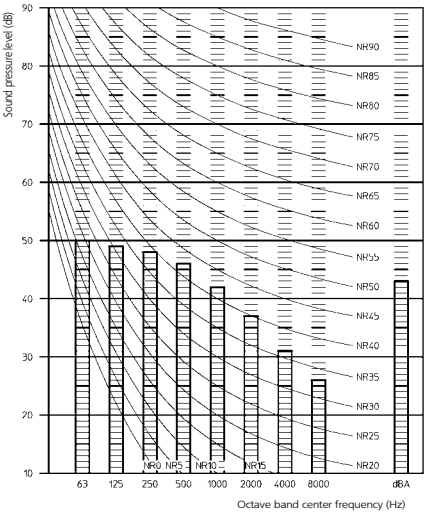
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

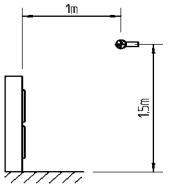


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



3TW58017-4

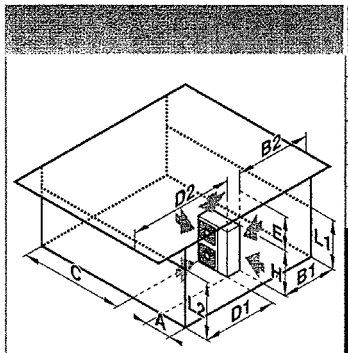
9 Installation

9 - 1 Service space

EDLQ011-016AA6V3

A. Non stacked installation

Legend Unit: mm



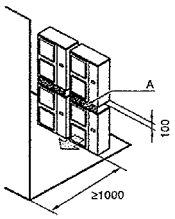
								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓			✓		L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓			✓						≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓			✓		L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present
- 1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.
- 2 In these cases, only 2 units can be installed.
- This situation is not allowed.

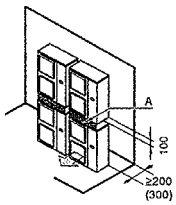
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



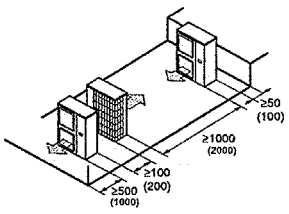
2. Obstacles exist in front of the air inlet



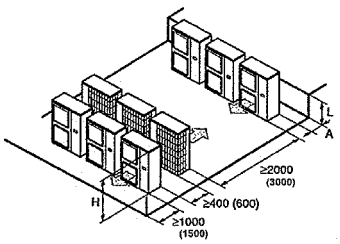
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



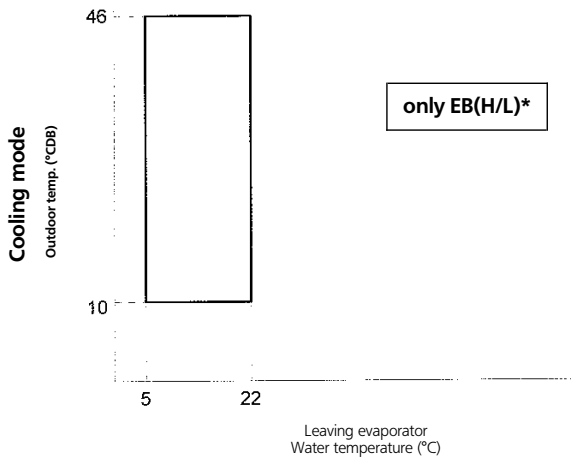
Relation of dimensions of H, A, and L are shown in the table below.

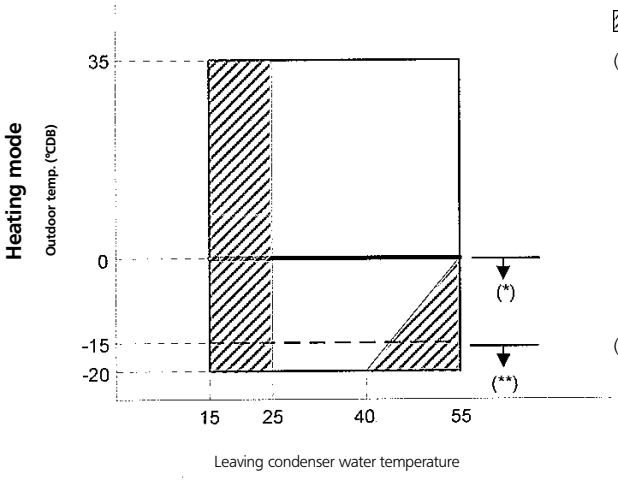
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

10 Operation range

EDLQ011-016AA6V3



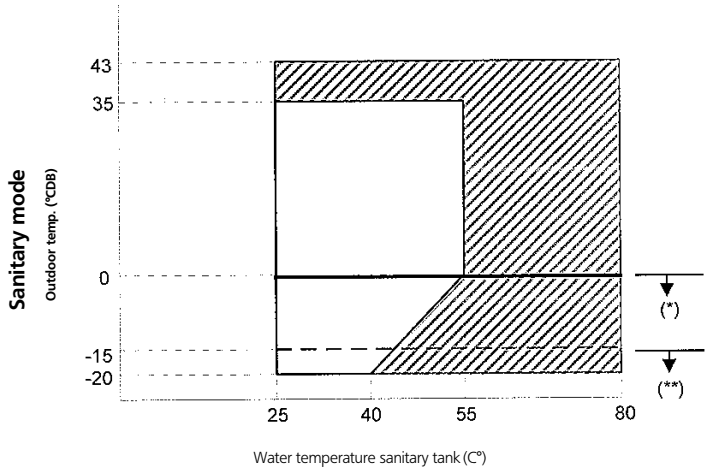


No heat pump operation, back up heater only

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

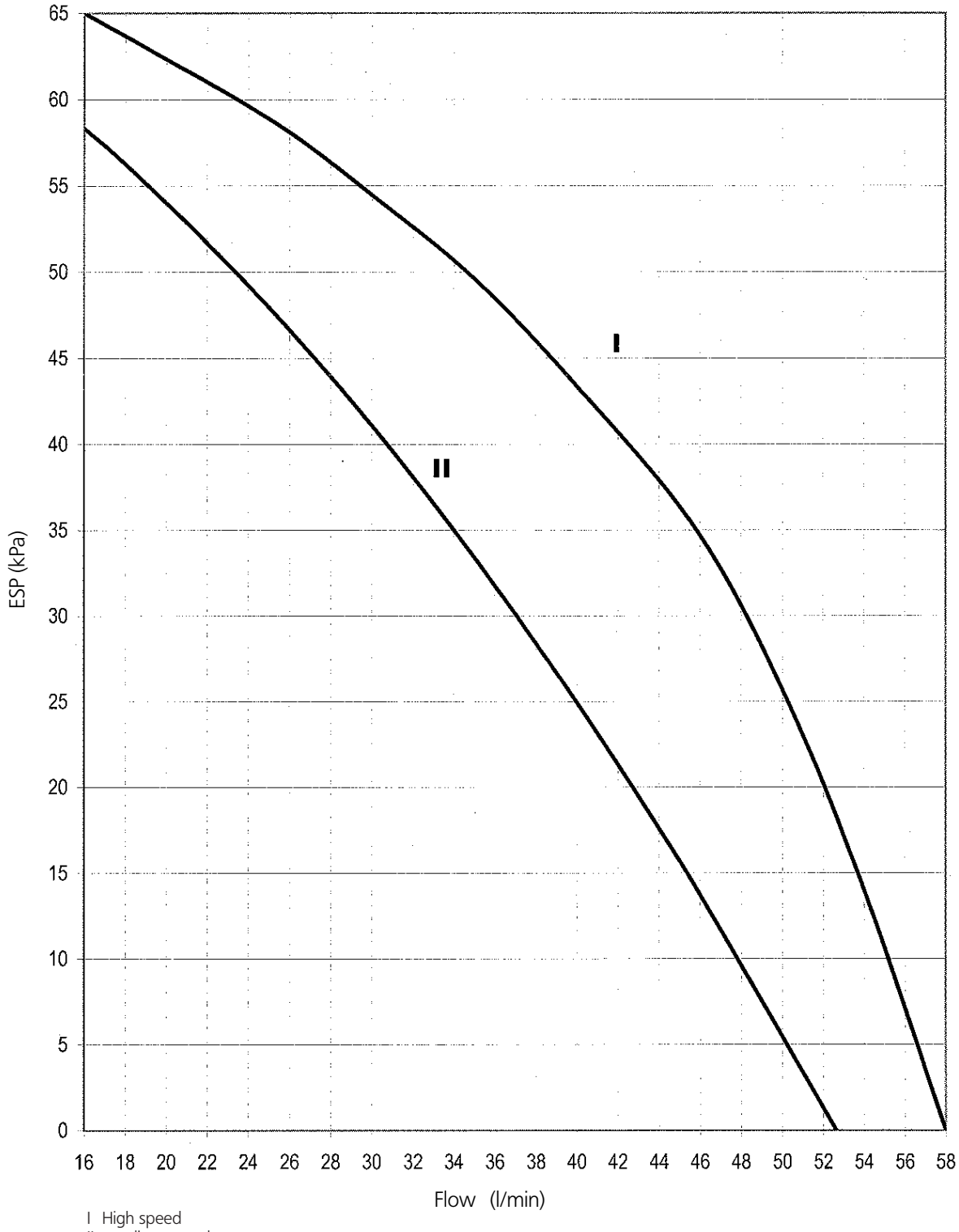
(**) only E(D/B)L*

4TW58013-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EDLQ011-016AA6V3



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EDLQ011-016AA6W1

1 Features

- Heating only monobloc with bottom plate heater
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EDLQ011AA6W1	EDLQ014AA6W1	EDLQ016AA6W1
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Heating PI	Nominal	kW	2.51	3.22	3.72
	COP	Nominal		4.46	4.35	4.30
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Heating PI	Nominal	kW	3.12	3.98	4.58
	COP	Nominal		3.48	3.29	3.29
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EDLQ011AA6W1	EDLQ014AA6W1	EDLQ016AA6W1
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Pressure	dBA	49	51	53
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2 Specifications

2-3 MAIN COMPONENTS				EDLQ011AA6W1	EDLQ014AA6W1	EDLQ016AA6W1
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT1G-VDYR@S		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		
Expansion vessel	Volume		l	10	10	10
	Maximum water pressure		bar	3	3	3
	Pre pressure		bar	1.0	1.0	1.0
Water filter	Diameter perforations		mm	1	1	1
	Material			Brass		
Water circuit	Piping connections		inch	G5/4 (FEMALE)		
	Piping		inch	5/4"		
	Safety valve		bar	3	3	3
	Manometer			Yes		
	Drain valve / Fill valve			yes		
	Shut off valve			yes		
	Air purge valve			yes		
	Total water volume (6)		l	5.5	5.5	5.5

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDLQ011AA6W1	EDLQ014AA6W1	EDLQ016AA6W1
Power supply compressor component	Main Power	Name		W1		
		Phase		3N~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Heating (A)	A	5.8	5.8	5.8
	Maximum running current	Heating	A	14	14	14
Power supply compressor component	Current	Recomended fuses	A	20	20	20
Power supply hydraulic component	Current back-up heater	Type		6W1		
Current back-up heater	Power Supply	Phase		3~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Running Current	Back-up heater	A	8.7	8.7	8.7
Running Current	Back-up heater + booster heater	+EK*V3	A	21.7(8.7+13)		
		+EK*Z2	A	16.2(8.7+7.5)		
Current back-up heater	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		
		+EK*Z2	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EDLQ011AA6W1	EDLQ014AA6W1	EDLQ016AA6W1
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EDLQ011-016AA6W1

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EDLQ011-016AA6W1

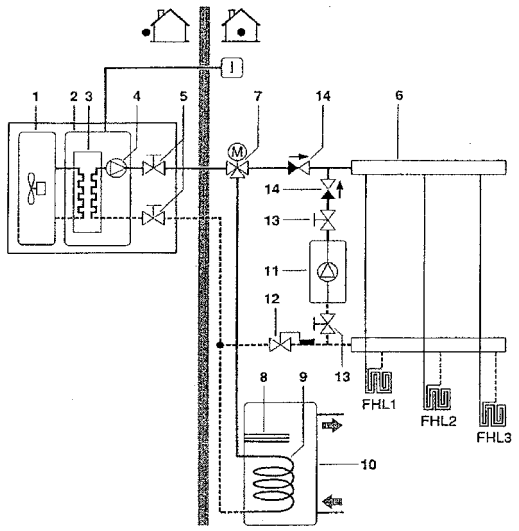
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

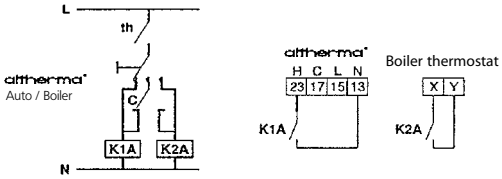
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q * unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EDLQ011-016AA6W1

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6W1	-20 (a)	5,86	2,21	5,51	2,42	5,39	2,66	5,25	2,95				
	-15	6,63	2,25	6,23	2,46	6,09	2,71	5,92	3,01	5,68	3,34		
	-7	8,13	2,29	7,66	2,51	7,51	2,77	7,32	3,08	7,03	3,43	6,53	3,81
	-2	9,28	2,29	8,76	2,52	8,61	2,79	8,41	3,11	8,11	3,46	7,55	3,85
	2	10,32	2,29	9,77	2,52	9,62	2,80	9,42	3,12	9,10	3,48	8,51	3,87
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	7,42	2,79	7,20	3,04	7,00	3,33	5,49	3,68				
	-15	8,29	2,85	8,00	3,11	7,72	3,41	7,60	3,76	7,57	4,16		
	-7	10,07	2,92	9,67	3,19	9,28	3,51	9,08	3,87	8,97	4,28	8,58	4,73
	-2	11,46	2,95	11,00	3,23	10,54	3,55	10,29	3,92	10,15	4,34	9,69	4,80
	2	12,75	2,96	12,23	3,25	11,72	3,57	11,43	3,96	11,27	4,38	10,75	4,84
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	8,47	3,20	8,34	3,49	8,22	3,83	6,50	4,21				
	-15	9,44	3,28	9,21	3,57	8,99	3,92	8,91	4,31	8,69	4,75		
	-7	11,44	3,37	11,08	3,67	10,73	4,03	10,53	4,43	10,17	4,90	9,81	5,41
	-2	13,01	3,41	12,58	3,72	12,14	4,09	11,89	4,50	11,43	4,97	11,00	5,49
	2	14,48	3,43	13,98	3,75	13,48	4,12	13,18	4,54	12,65	5,01	12,15	5,54
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6W1	-20 (a)	4,96	2,16	4,67	2,37	4,57	2,60	4,45	2,89				
	-15	5,61	2,20	5,27	2,41	5,16	2,66	5,01	2,95	4,81	3,27		
	-7	6,88	2,24	6,49	2,46	6,36	2,72	6,19	3,02	5,95	3,35	5,53	3,73
	-2	7,70	2,20	7,27	2,42	7,15	2,68	6,98	2,98	6,73	3,32	6,27	3,70
	2	8,57	2,19	8,11	2,42	7,99	2,69	7,82	3,00	7,56	3,34	7,06	3,72
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	6,31	2,70	6,13	2,94	5,96	3,23	4,67	3,56				
	-15	7,05	2,76	6,80	3,01	6,57	3,30	6,46	3,64	6,44	4,02		
	-7	8,57	2,83	8,23	3,09	7,89	3,40	7,72	3,75	7,63	4,14	7,30	4,58
	-2	9,11	2,67	8,74	2,92	8,38	3,21	8,18	3,55	8,07	3,93	7,70	4,34
	2	10,13	2,68	9,72	2,94	9,31	3,24	9,09	3,58	8,96	3,96	8,55	4,38
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	7,00	3,11	6,89	3,39	6,79	3,71	5,37	4,08				
	-15	7,80	3,18	7,61	3,46	7,43	3,80	7,37	4,18	7,18	4,61		
	-7	9,45	3,26	9,15	3,56	8,86	3,91	8,70	4,30	8,40	4,75	8,11	5,25
	-2	9,96	3,03	9,62	3,31	9,29	3,64	9,09	4,00	8,75	4,42	8,41	4,88
	2	11,08	3,05	10,69	3,34	10,31	3,67	10,08	4,04	9,68	4,46	9,29	4,93
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

3TW58012-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

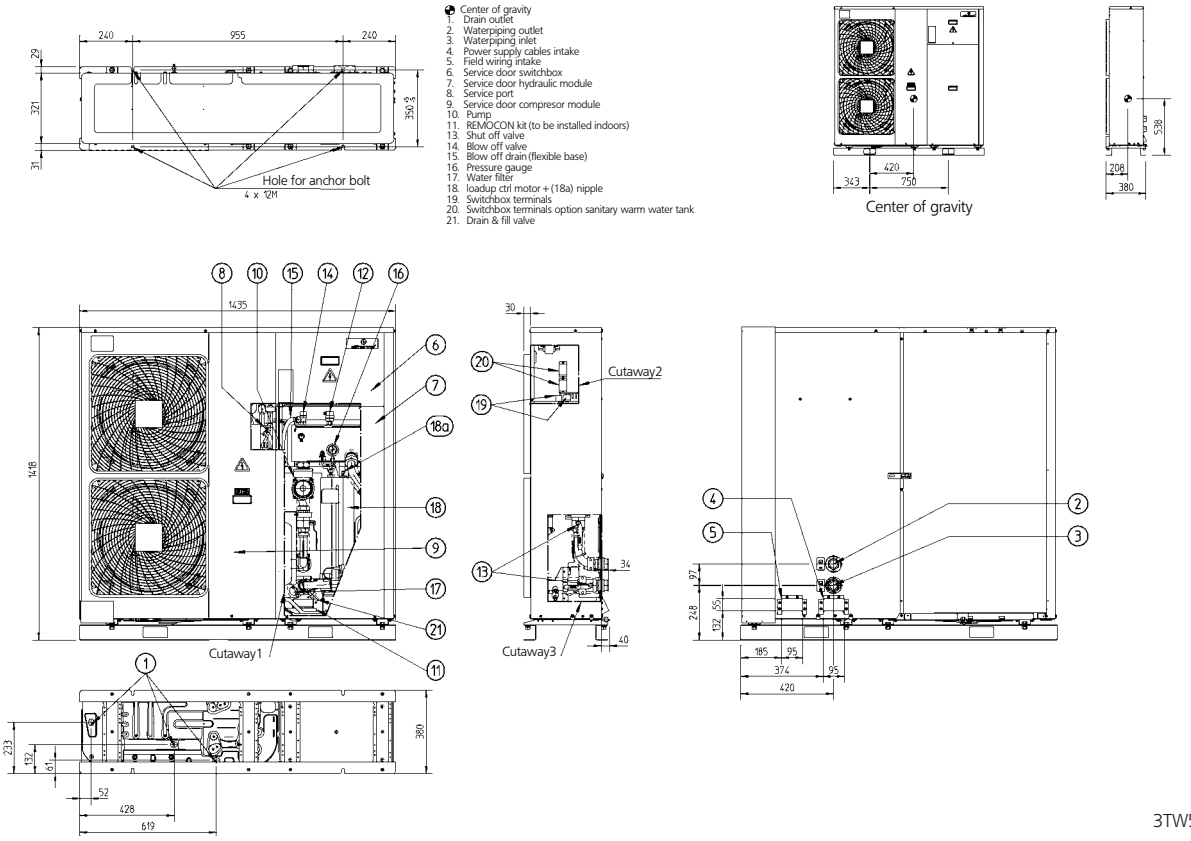
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

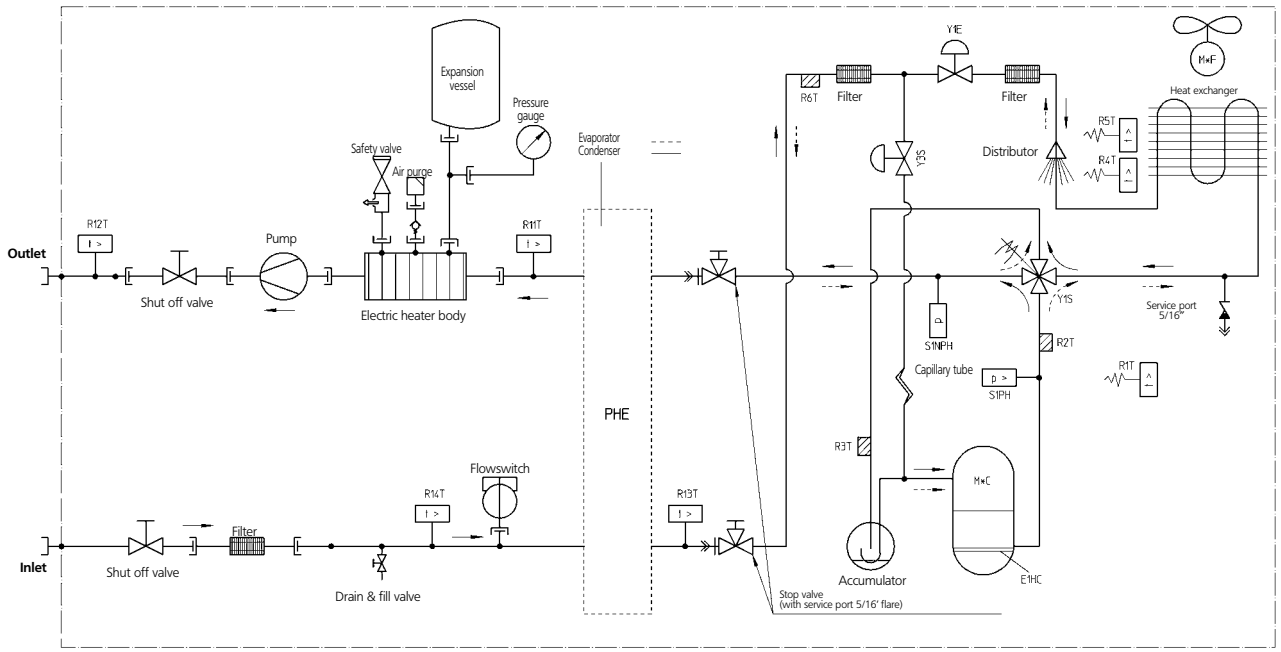
EDLQ011-016AA6W1



6 Piping diagram

6 - 1 Piping diagram

EDLQ011-016AA6W1



R1T	: Thermistor (Air)	Y1S	: 4-way valve	——►	Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve	- - - ►	Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

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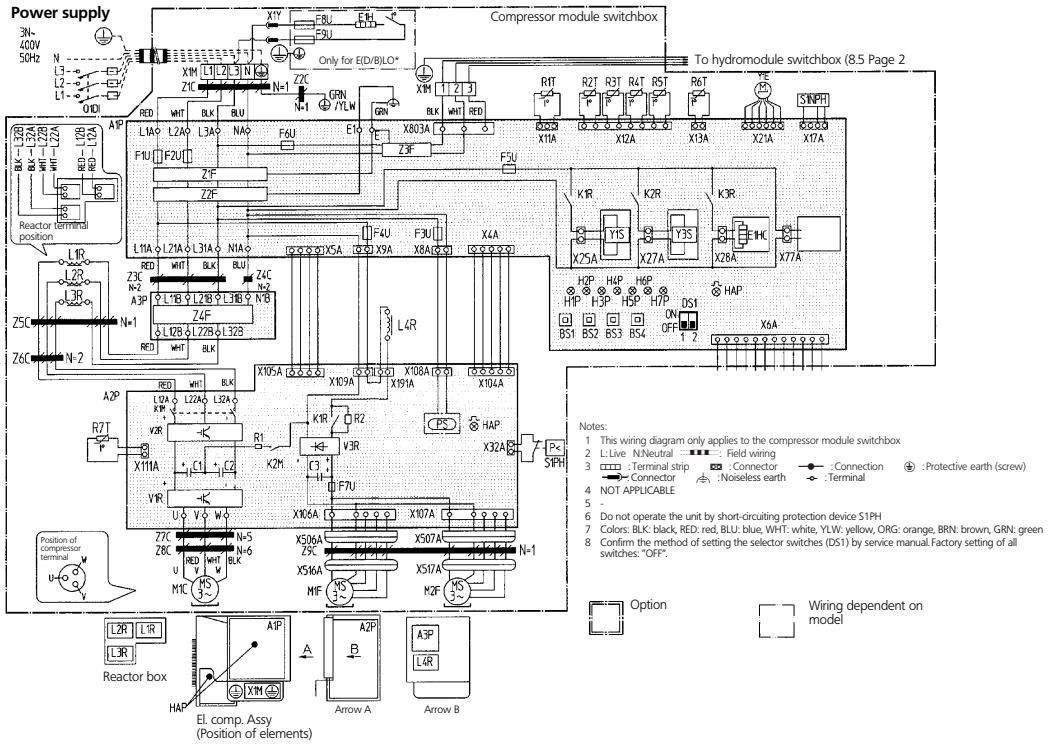
7 Wiring diagram

7 - 1 Wiring diagram

EDLQ011-016AA6W1



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (T 31,5A/250V)
F2U	Fuse (T 31,5A/250V)
F3U	Fuse (T 6,3A/250V)
F4U	Fuse (T 6,3A/250V)
F5U	Fuse (T 6,3A/250V)
F6U	Fuse (T 6,3A/250V)
F7U	Fuse (T 5,0A/250V)
F8U, F9U	Fuse (T 1,0A/250V)
H1P–7P (A1P)	Pilotlamp (service monitor - orange)
HAP (A1P)	Pilotlamp (service monitor - green)
HAP (A2P)	Pilotlamp (service monitor - green)
K1M–K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R–L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Earth leakage protector
R1–R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
V1R, V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C–Z9C	Noise filter
Z1F–Z4F	Noise filter
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral : Field wiring
3 : Terminal strip : Connector : Connection : Protective earth (screw)
: Connector : Noiseless earth : Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual.Factory setting of all switches: "OFF".

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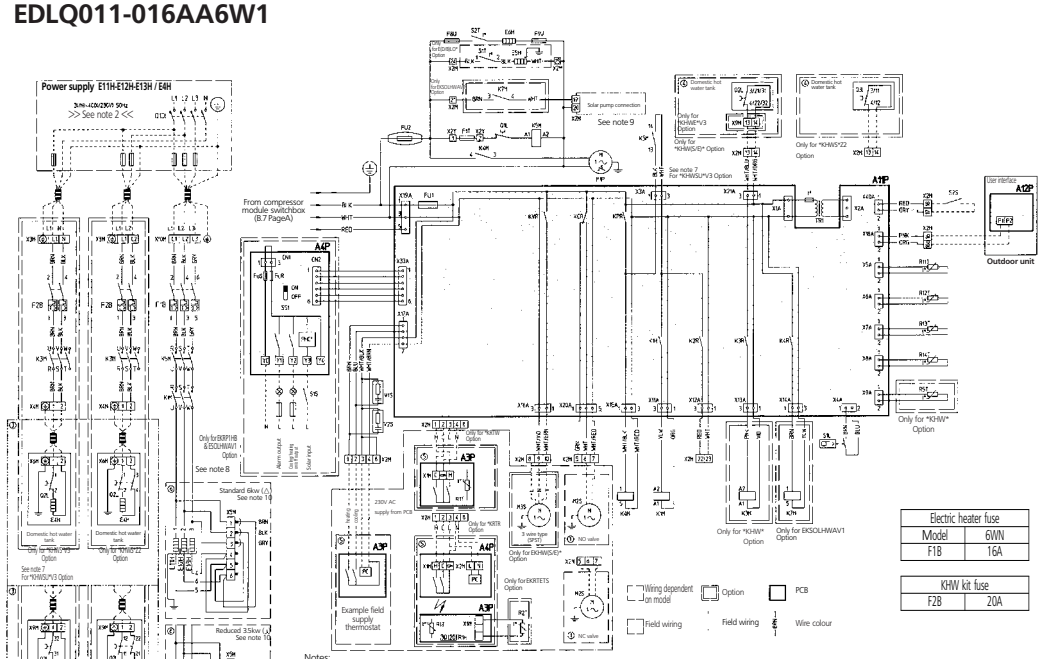

Electric heater fuse	
Model	6WN
F1B	16A

KHW kit fuse	
F2B	20A

A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (*KRTR)	: Solar/remote alarm PCB
A4P (EKRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L/Q3L	: Thermal protector 1/2Booster heater
R1H (*KRTR))	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip Connector Terminal Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit.(N,L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

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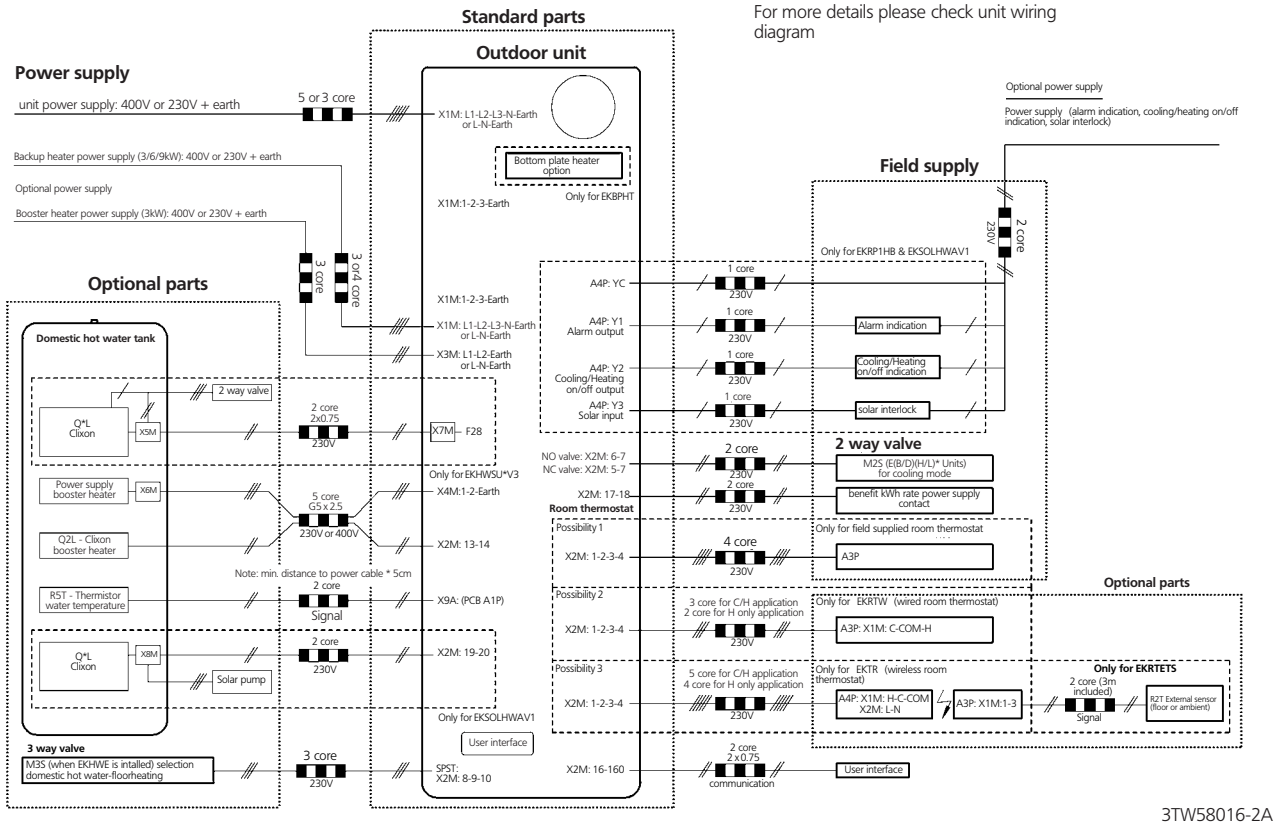
7 Wiring diagram

7 - 2 External connection diagram

EDLQ011-016AA6W1 Electrical connection diagram Altherma

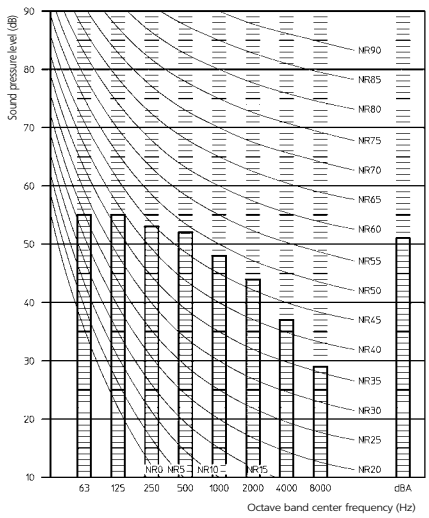


8 Sound data

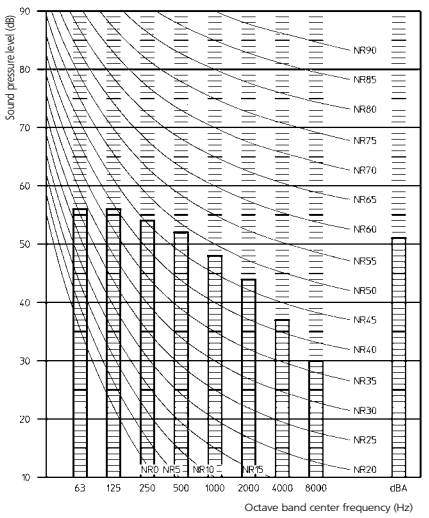
8 - 1 Sound pressure spectrum

EDLQ011-016AA6W1

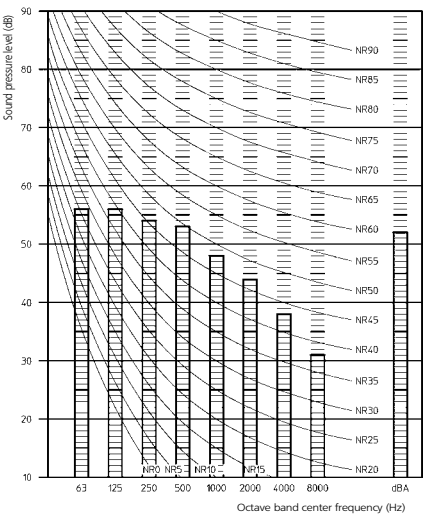
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

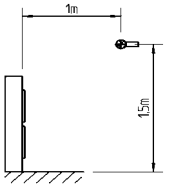


E(D/B)(H/L)Q016* HEATING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

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8 Sound data

8 - 2 Sound pressure night quiet mode

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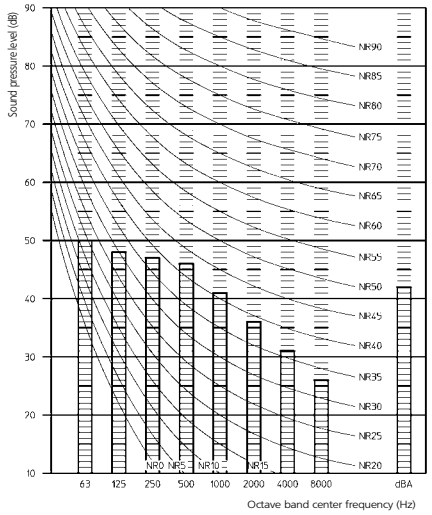
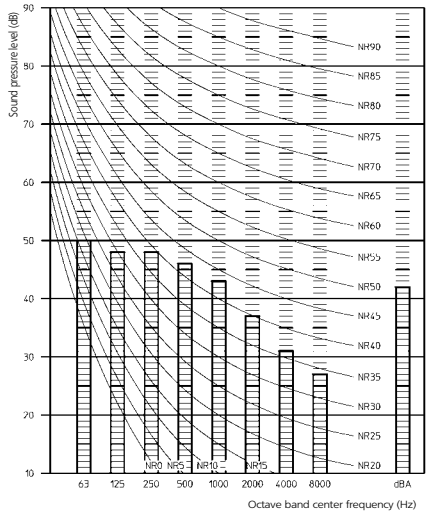
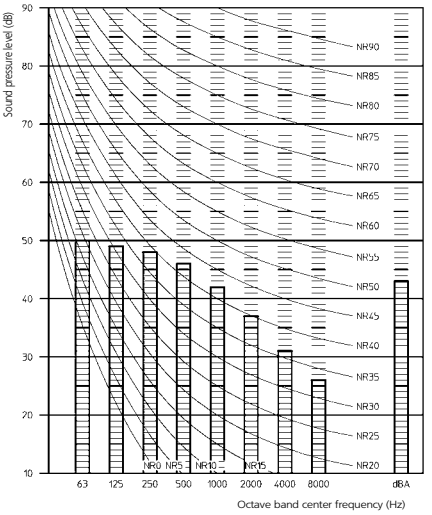
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

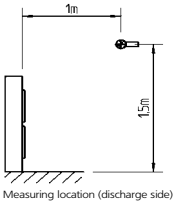


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



3TW58017-4

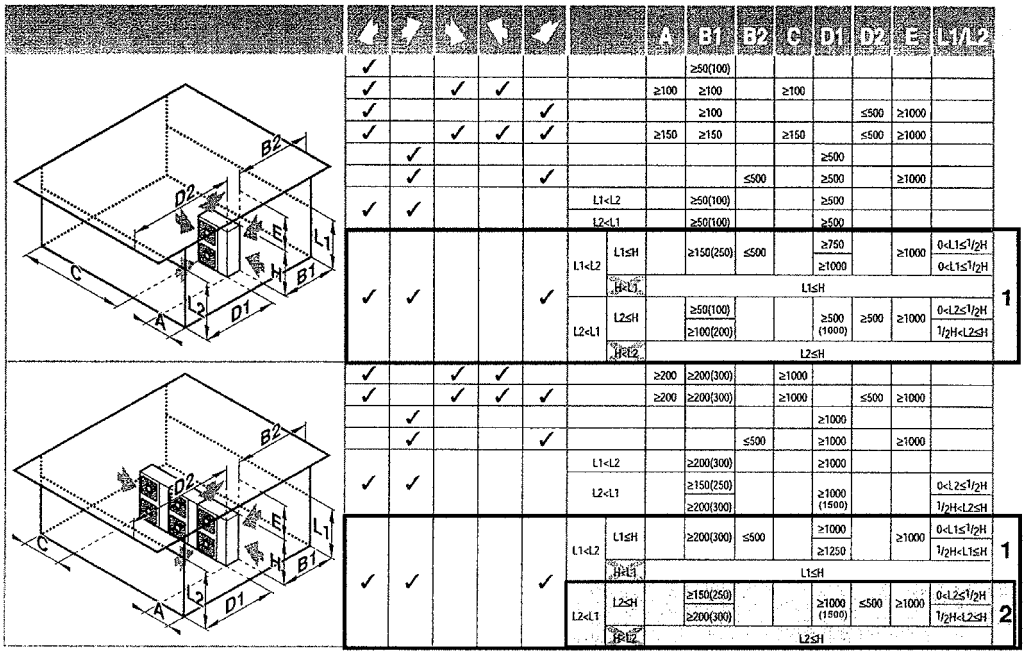
9 Installation

9 - 1 Service space

EDLQ011-016AA6W1

A. Non stacked installation

Legend Unit: mm



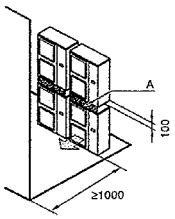
								A	B1	B2	C	D1	D2	E	L1/L2	
✓									≥50(100)							
✓		✓	✓					≥100	≥100		≥100					
✓				✓					≥100				≤500	≥1000		
✓		✓	✓	✓				≥150	≥150		≥150		≤500	≥1000		
	✓											≥500				
	✓			✓						≤500		≥500		≥1000		
✓	✓					L1<L2			≥50(100)			≥500				
						L2<L1			≥50(100)			≥500				
✓	✓			✓		L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
												≥1000			0<L1≤1/2H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
									≥100(200)						1/2H<L2≤H	
							H<L2		L2≤H							
✓		✓	✓					≥200	≥200(300)		≥1000					
✓		✓	✓	✓				≥200	≥200(300)		≥1000		≤500	≥1000		
	✓											≥1000				
	✓			✓						≤500		≥1000		≥1000		
✓	✓					L1<L2			≥200(300)			≥1000				
						L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H	
									≥200(300)						1/2H<L2≤H	
✓	✓			✓		L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
												≥1250			1/2H<L1≤H	
							H<L1		L1≤H							
						L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
									≥200(300)						1/2H<L2≤H	
							H<L2		L2≤H							

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present
- 1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.
- 2 In these cases, only 2 units can be installed.
- This situation is not allowed.

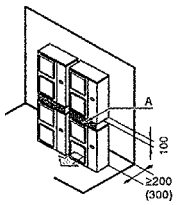
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



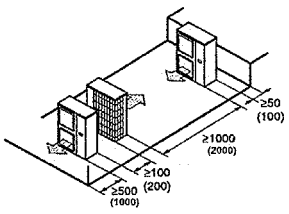
2. Obstacles exist in front of the air inlet



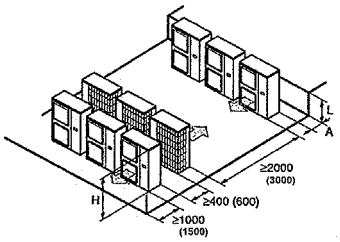
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



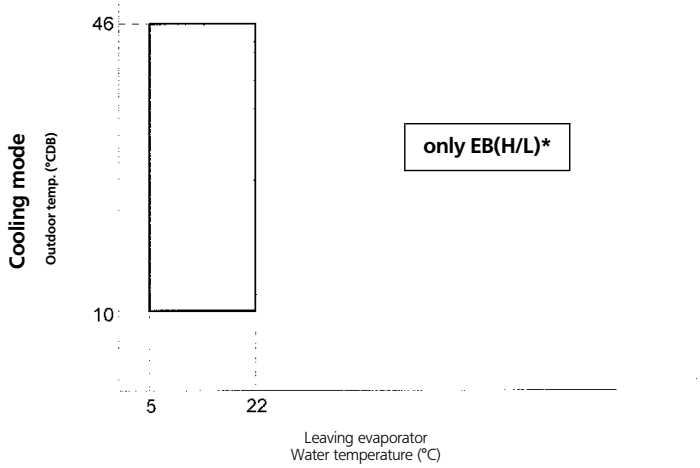
Relation of dimensions of H, A, and L are shown in the table below.

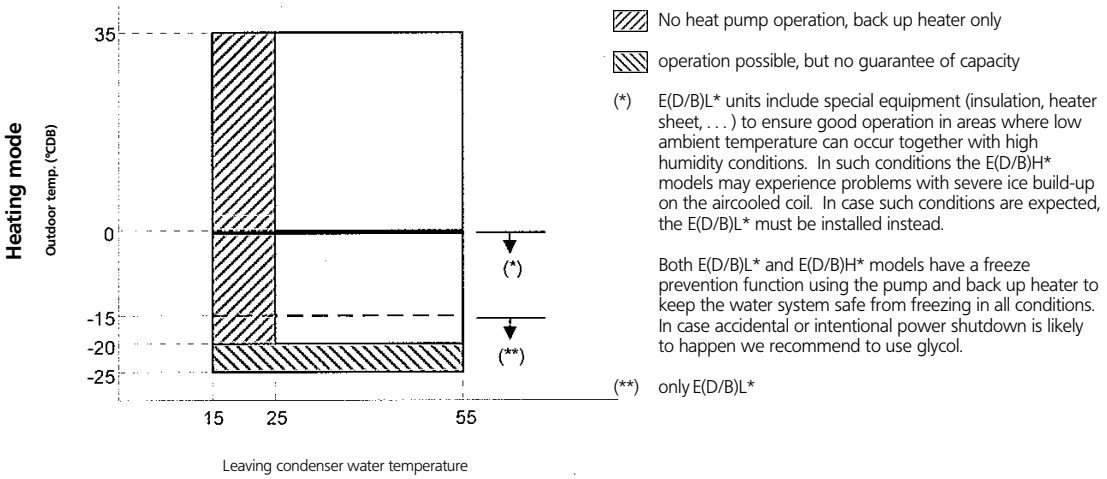
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

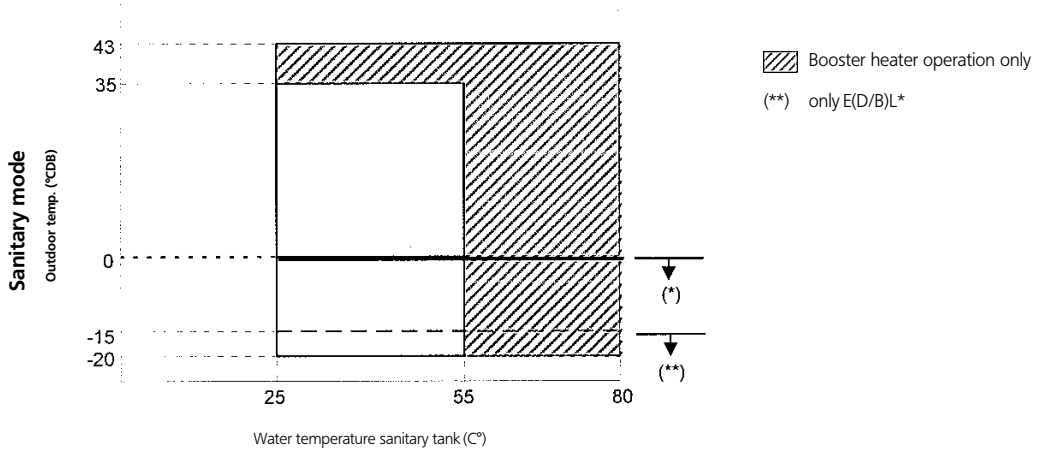
3TW26739-4

10 Operation range

EDLQ011-016AA6W1





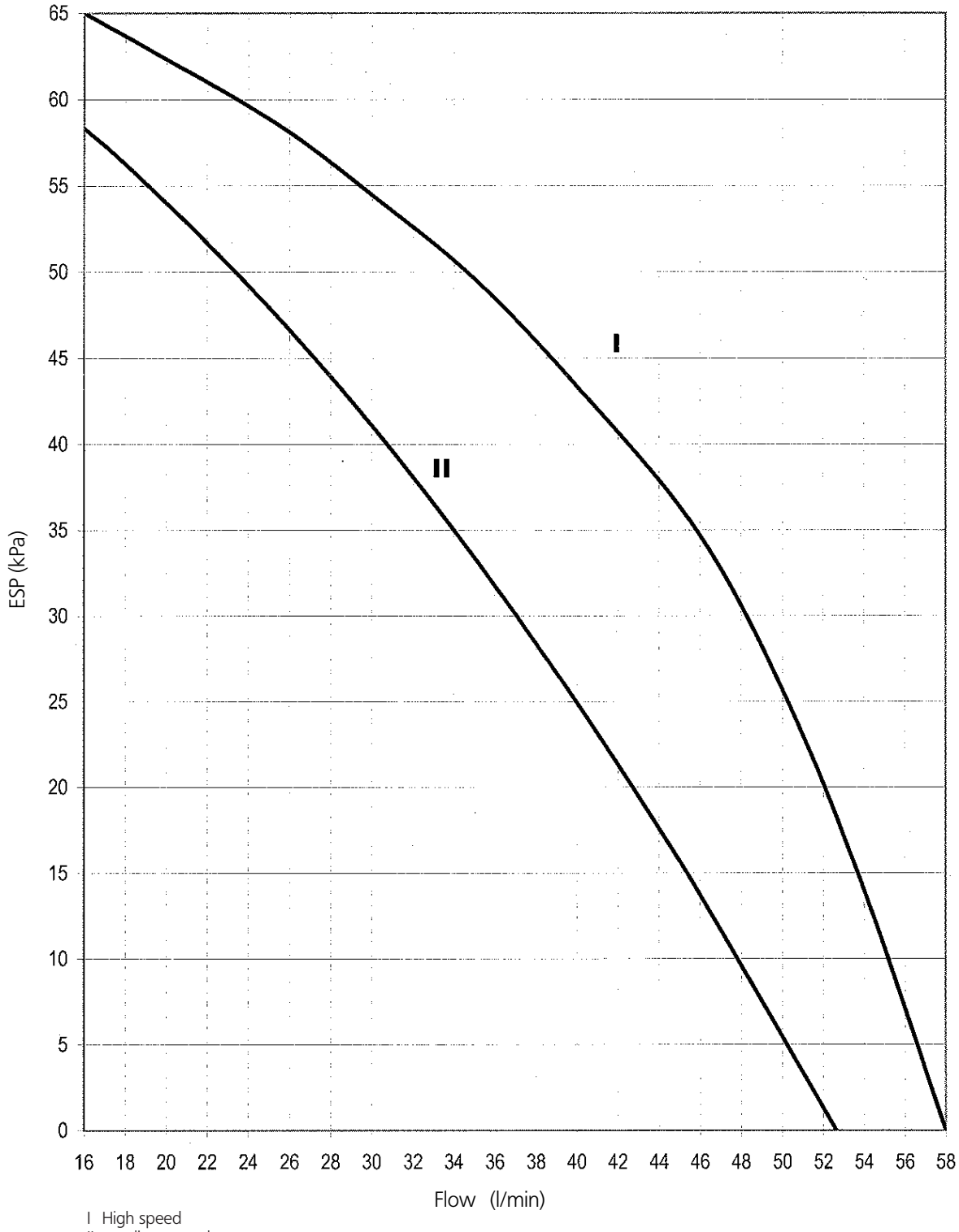


4TW58133-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EDLQ011-016AA6W1



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EBHQ011-016AA6V3

1 Features

- Reversible monobloc
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Cooling capacity	Nominal	kW	12.85	15.99	16.73
	Heating PI	Nominal	kW	2.47	3.20	3.79
	Cooling PI	Nominal	kW	3.78	5.65	6.28
	COP	Nominal		4.54	4.37	4.22
	EER	Nominal		3.39	2.83	2.66
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Cooling capacity	Nominal	kW	10.00	12.50	13.10
	Heating PI	Nominal	kW	3.22	3.91	4.62
	Cooling PI	Nominal	kW	3.60	5.30	5.85
	COP	Nominal		3.37	3.35	3.26
	EER	Nominal		2.78	2.36	2.24
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Cooling - Ambient	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Cooling - Waterside	Min	°C	5	5	5
		Max	°C	22	22	22
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	51	51	52
	Cooling	Sound Power	dBA	65	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1

2 Specifications

2-2 TECHNICAL SPECIFICATIONS			EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Refrigerant Oil	Type		Daphne FVC68D		
	Charged Volume	l	1.0	1.0	1.0
Defrost Method			Pressure equalising		
Defrost Control			Sensor for outdoor heat exchanger temperature		
Capacity Control Method			Inverter controlled		
Safety Devices			High pressure switch		
			Fan motor thermal protector		
			Fuse		
Notes			The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
			Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
			Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
			15°-25°C: BUH only, no heat pump operation = during commisioning		
			including piping + PHE + back-up heater / excluding expansion vessel		
			E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2-3 MAIN COMPONENTS				EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m³/min	90	90	90
	Cooling	High	m³/min	96	100	97
Fan	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	780	780	780
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT100G-VD		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
		Cooling	kPa	55.9	49.1	46.8
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
		Cooling	l/min	36.8	45.9	48.0
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		

2 Specifications

2-3 MAIN COMPONENTS			EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Expansion vessel	Volume	l	10	10	10
	Maximum water pressure	bar	3	3	3
	Pre pressure	bar	1.0	1.0	1.0
Water filter	Diameter perforations	mm	1	1	1
	Material		Brass		
Water circuit	Piping connections	inch	G5/4 (FEMALE)		
	Piping	inch	5/4"		
	Safety valve	bar	3	3	3
	Manometer		Yes		
	Drain valve / Fill valve		yes		
	Shut off valve		yes		
	Air purge valve		yes		
	Total water volume (6)	l	5.5	5.5	5.5

2-4 ELECTRICAL SPECIFICATIONS				EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Power supply compressor component	Main Power	Name		V3		
		Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Current	Minimum Ssc value	kVa	Equipment complying with EN/IEC 61000-3-12(×)		
Current	Maximum running current	Cooling	A	22.8	27.4	31.9
Power supply compressor component	Current	Recomended fuses	A	32	32	32
	Wiring connections	For power supply compressor component		See installiation manual		
Power supply hydraulic component	Current back-up heater	Type		6V3		
Current back-up heater	Power Supply	Phase		1~		
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Running Current	Back-up heater	A	26	26	26
Running Current	Back-up heater + booster heater	+EK*V3	A	39(26+13)		
Current back-up heater	Z-max	Back-up heater	A	0.29	0.29	0.29
		Back-up heater + booster heater	A	0.17	0.17	0.17
	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EBHQ011AA6V3	EBHQ014AA6V3	EBHQ016AA6V3
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EBHQ011-016AAV3

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EBHQ011-016AA6V3

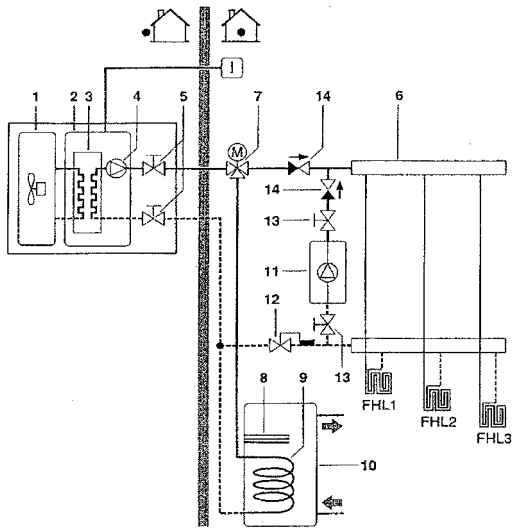
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

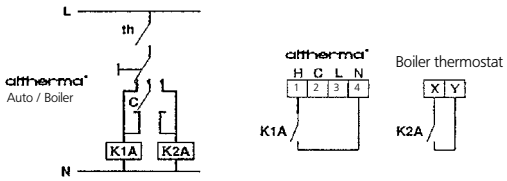
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EBHQ011-016AA6V3

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6V3	-20 (a)	5,86	2,17	5,51	2,37								
	-15	6,63	2,21	6,23	2,42	6,09	2,67						
	-7	8,13	2,24	7,66	2,47	7,51	2,72	7,32	3,18				
	-2	9,28	2,25	8,76	2,48	8,61	2,74	8,41	3,21	8,11	3,57		
	2	10,32	2,25	9,77	2,48	9,62	2,75	9,42	3,22	9,10	3,59	8,51	4,00
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	7,42	2,78	7,20	3,03								
	-15	8,29	2,84	8,00	3,10	7,72	3,40						
	-7	10,07	2,91	9,67	3,18	9,28	3,49	9,08	3,80				
	-2	11,46	2,94	11,00	3,21	10,54	3,54	10,29	3,85	10,13	4,26		
	2	12,75	2,95	12,23	3,23	11,72	3,56	11,43	3,88	11,25	4,30	10,73	4,75
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	8,47	3,27	8,34	3,56								
	-15	9,44	3,34	9,21	3,64	8,99	3,99						
	-7	11,44	3,43	11,08	3,74	10,73	4,11	10,53	4,47				
	-2	13,01	3,47	12,58	3,79	12,14	4,17	11,89	4,54	11,45	5,01		
	2	14,48	3,49	13,98	3,82	13,48	4,20	13,18	4,58	12,67	5,06	12,17	5,59
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6V3	-20 (a)	4,96	2,13	4,67	2,32								
	-15	5,61	2,16	5,27	2,37	5,16	2,61						
	-7	6,88	2,20	6,49	2,41	6,36	2,67	6,19	3,12				
	-2	7,70	2,16	7,27	2,38	7,15	2,63	6,98	3,08	6,73	3,43		
	2	8,57	2,16	8,11	2,38	7,99	2,64	7,82	3,09	7,56	3,45	7,06	3,84
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	6,31	2,69	6,13	2,93								
	-15	7,05	2,75	6,80	3,00	6,57	3,29						
	-7	8,57	2,82	8,23	3,08	7,89	3,38	7,72	3,68				
	-2	9,11	2,66	8,74	2,91	8,38	3,20	8,18	3,49	8,05	3,86		
	2	10,13	2,67	9,72	2,93	9,31	3,22	9,09	3,52	8,95	3,89	8,53	4,30
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	7,00	3,17	6,89	3,45								
	-15	7,80	3,24	7,61	3,53	7,43	3,87						
	-7	9,45	3,33	9,15	3,63	8,86	3,99	8,70	4,34				
	-2	9,96	3,09	9,62	3,38	9,29	3,71	9,09	4,04	8,76	4,46		
	2	11,08	3,11	10,69	3,40	10,31	3,74	10,08	4,08	9,69	4,50	9,31	4,98
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

4 Capacity tables

4 - 2 Cooling capacity tables

EBHQ011-016AA6V3

Maximum Cooling Capacity

Model	Tamb	20		25		30		35		40		45	
	LWE [°C]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]
EB(H/L)Q011AA6V3	7	11,08	2,70	10,99	2,97	10,62	3,26	10,00	3,60	9,16	3,97	8,14	4,38
	10	11,77	2,73	11,66	3,00	11,27	3,31	10,61	3,65	9,73	4,03	8,65	4,44
	13	12,93	2,76	12,81	3,04	12,38	3,35	11,66	3,70	10,70	4,08	9,39	4,65
	15	13,74	2,78	13,61	3,06	13,15	3,38	12,39	3,73	11,37	4,12	9,73	4,54
	18	15,17	2,81	14,66	3,10	13,87	3,42	12,85	3,78	11,61	4,18	9,85	4,18
	22	16,92	2,85	16,36	3,15	15,49	3,48	14,36	3,85	13,00	4,26	10,32	3,73
EB(H/L)Q014AA6V3	7	13,87	4,02	13,75	4,39	13,29	4,81	12,50	5,30	11,08	5,08	9,81	5,60
	10	14,92	4,08	14,79	4,46	14,28	4,90	13,43	5,39	11,92	5,17	10,56	5,70
	13	16,38	4,15	16,23	4,54	15,68	4,99	14,75	5,49	13,09	5,26	10,95	5,78
	15	17,39	4,20	17,23	4,60	16,64	5,05	15,66	5,55	13,91	5,32	11,35	5,64
	18	18,92	4,27	18,28	4,68	17,29	5,14	15,99	5,65	13,99	5,41	11,49	5,20
	22	21,07	4,37	20,37	4,79	19,28	5,27	17,85	5,79	15,65	5,54	12,05	4,64
EB(H/L)Q016AA6V3	7	14,52	4,45	14,44	4,87	13,95	5,33	13,10	5,85	11,57	5,58	9,84	5,47
	10	15,65	4,54	15,53	4,97	14,99	5,44	14,07	5,96	12,43	5,68	10,59	5,56
	13	17,19	4,64	17,05	5,07	16,45	5,55	15,44	6,08	13,64	5,79	10,98	5,65
	15	18,26	4,71	18,09	5,14	17,46	5,63	16,39	6,16	14,49	5,86	11,38	5,51
	18	19,87	4,81	19,20	5,25	18,14	5,74	16,73	6,28	14,57	5,97	11,52	5,08
	22	22,14	4,95	21,39	5,40	20,21	5,90	18,66	6,44	16,28	6,12	12,08	4,53

3TW58012-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)
LWE : Leaving Water Evaporator temperature (°C)
LWC : Leaving Water Condensor temperature (°C)
Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

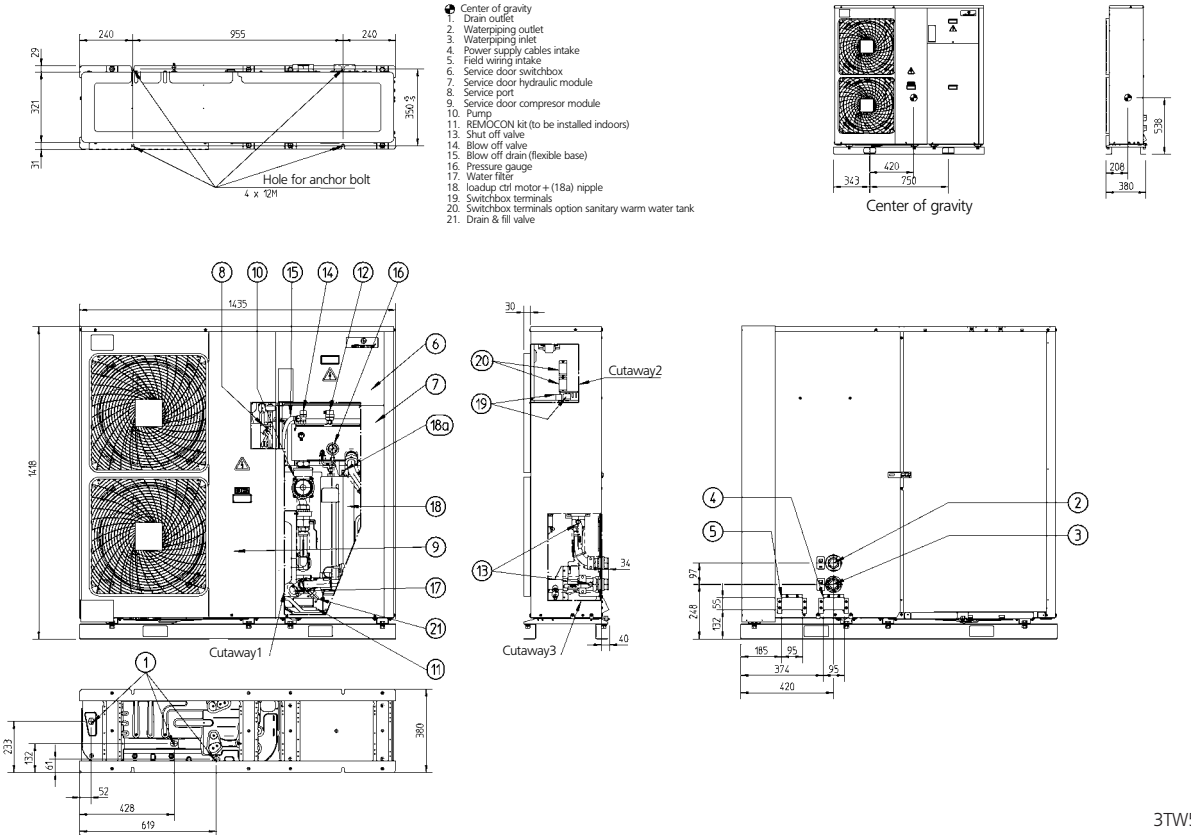
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

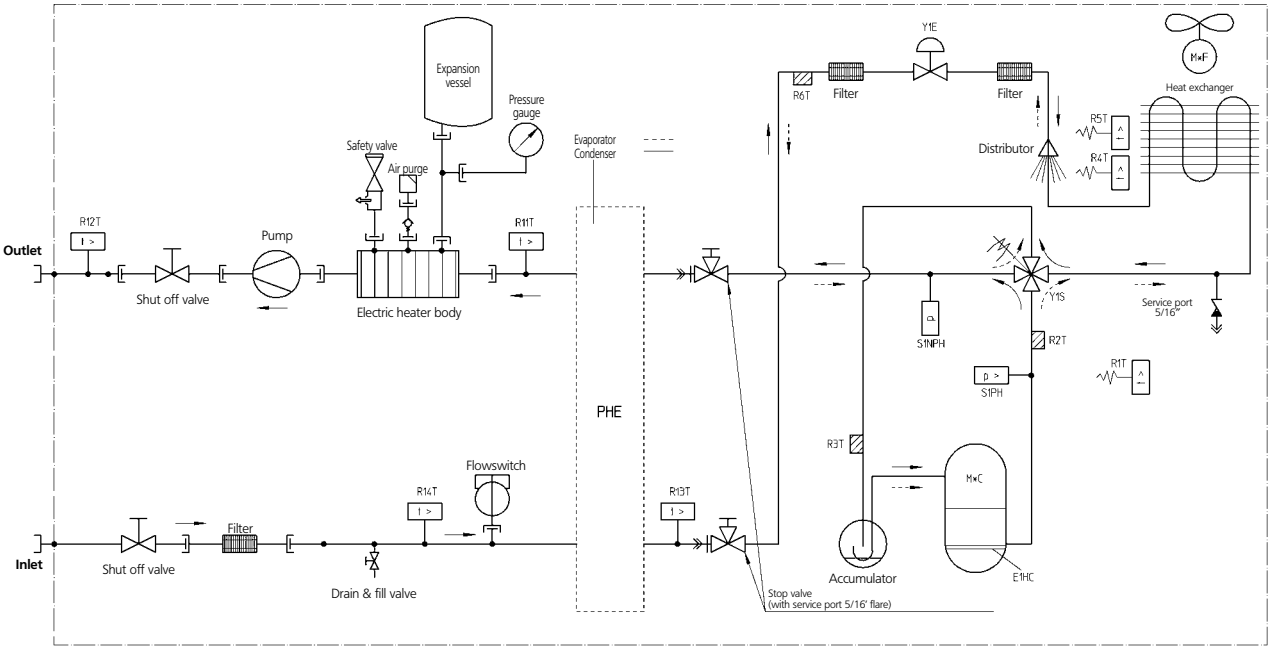
EBHQ011-016AA6V3



6 Piping diagram

6 - 1 Piping diagram

EBHQ011-016AA6V3



R1T	: Thermistor (Air)	Y1S	: 4-way valve	——→	Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve	- - - - →	Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

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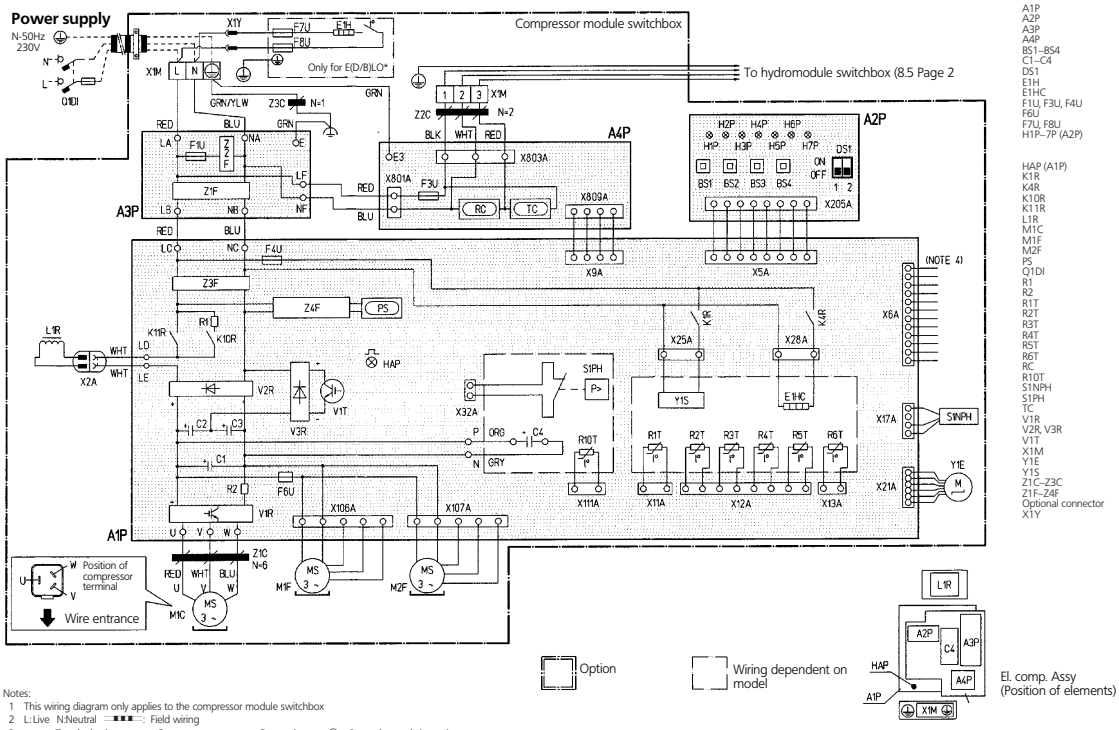
7 Wiring diagram

7 - 1 Wiring diagram

EBHQ011-016AA6V3



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
A4P	Printed circuit board
BS1~BS4	Push button switch
C1~C4	Capacitor
DS1	DIP switch
E1H	Bottomplate heater
E1HC	Crankcase heater
F1U, F3U, F4U	Fuse (T 6.3A/250V)
F6U	Fuse (T 5.0A/250V)
F7U, F8U	Fuse (F 1,0A/250V)
H1P~7P (A2P)	Light Emit. Diode (Serv. Monitor-Orange) Prepare, Test ———— Flickering Malfunction Detection ~ Light up
HAP (A1P)	Light emitting diode (service monitor green)
K1R	Magnetic relay (Y1S)
K4R	Magnetic relay (E1HC)
K10R	Magnetic relay
K11R	Magnetic relay
L1R	Reactor
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Field earth leakage breaker (300mA)
R1	Resistor
R2	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
RC	Signal receiver circuit
R10T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
TC	Signal transmission circuit
V1R	Power module
V2R, V3R	Diode module
V1T	IGBT
X1M	Terminal strip (Power supply)
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Z1C~Z3C	Noise filter (ferrite core)
Z1F~Z4F	Noise filter
Optional connector	
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral Field wiring
3 :Terminal strip :Connector :Connection :Protective earth (screw)
:Connector :Noiseless earth :Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

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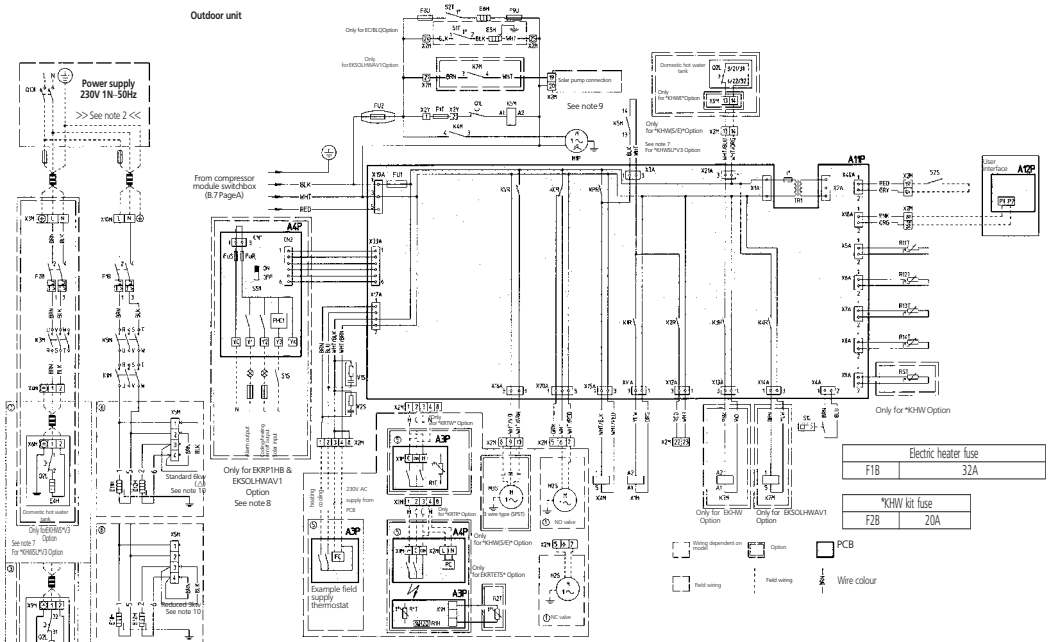
EBHQ011-016AA6V3



Electric heater fuse	
F1B	32A
*KHW kit fuse	
F2B	20A

A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (EKRTR)	: Solar/remote alarm PCB
A4P (*KRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L	: Thermal protector 1/2Booster heater
R1H (*KRTR)	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M~X10M	: Terminal strips
X2Y	: Connector

Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N.L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

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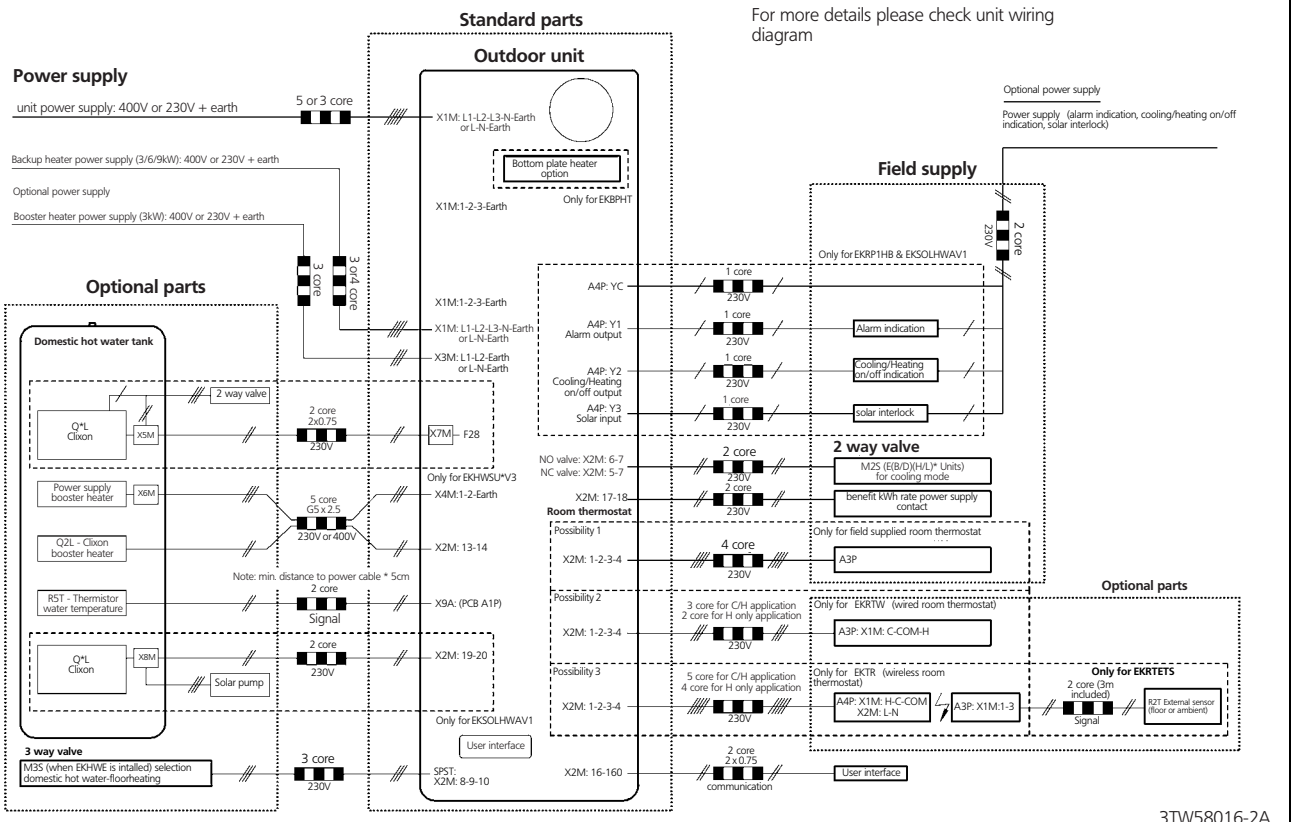
7 Wiring diagram

7 - 2 External connection diagram

EBHQ011-016AA6V3 Electrical connection diagram Altherma

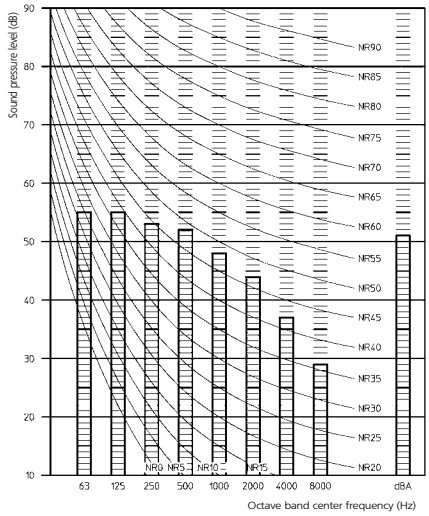


8 Sound data

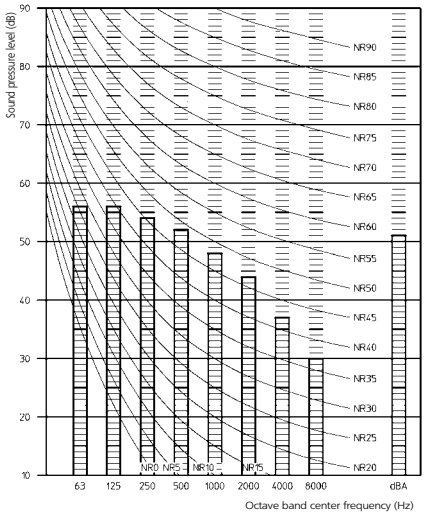
8 - 1 Sound pressure spectrum

EBHQ011-016AA6V3

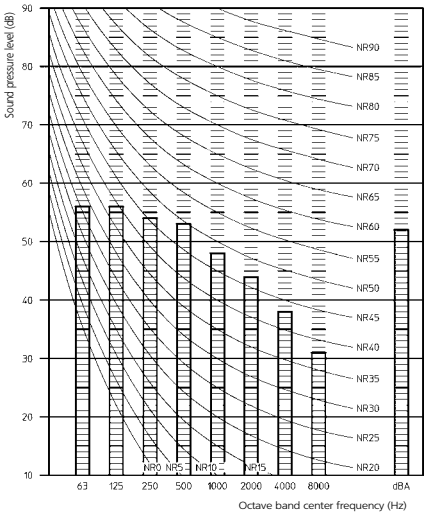
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

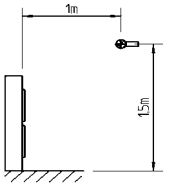


E(D/B)(H/L)Q016* HEATING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

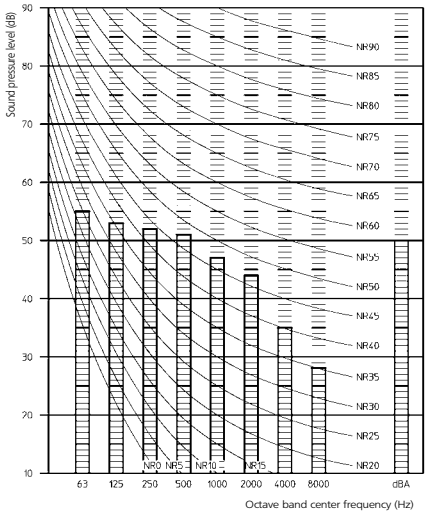


Measuring location (discharge side)

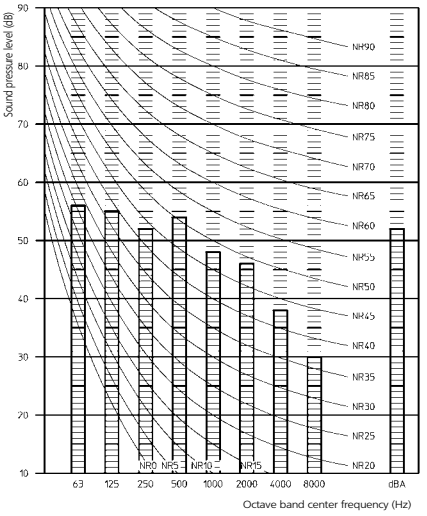
3TW58017-2

EBHQ011-016AA6V3

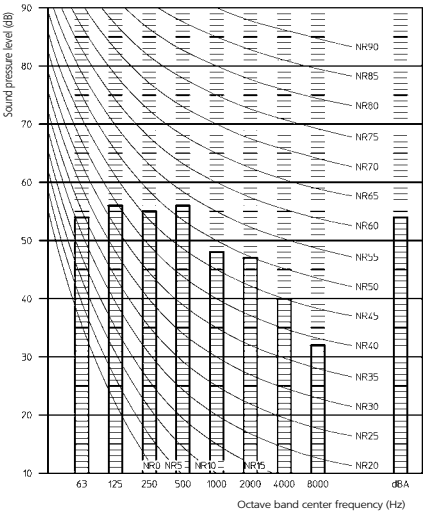
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

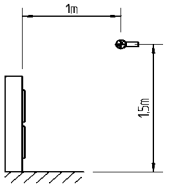


E(D/B)(H/L)Q016* COOLING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

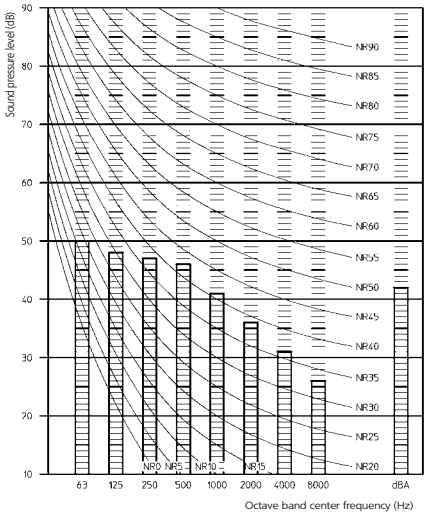
3TW58017-1

8 Sound data

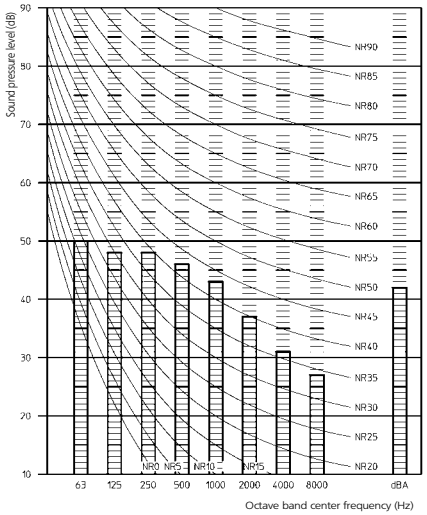
8 - 2 Sound pressure night quiet mode

EBHQ011-016AA6V3

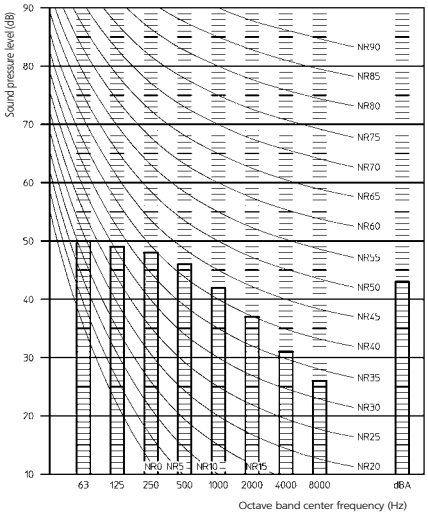
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

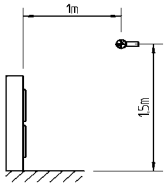


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

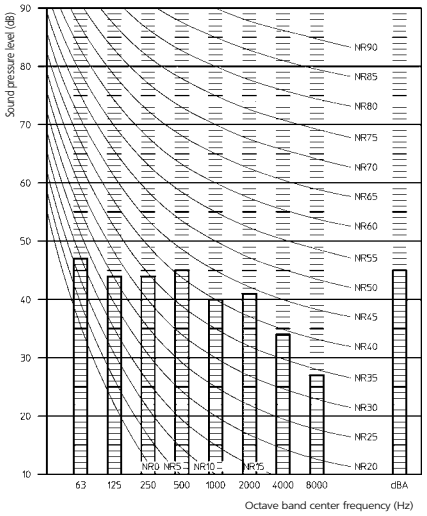


Measuring location (discharge side)

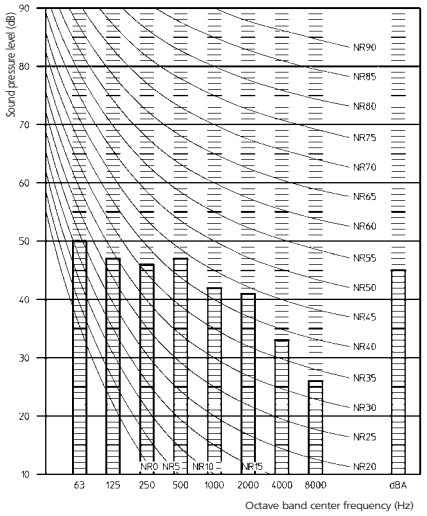
3TW58017-4

EBHQ011-016AA6V3

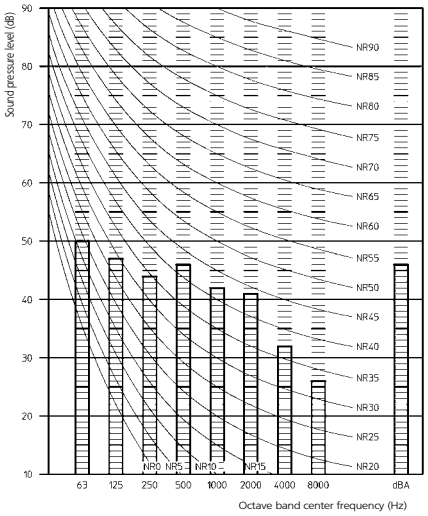
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

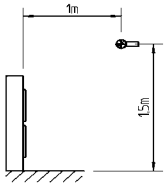


E(D/B)(H/L)Q016* COOLING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

3TW58017-3

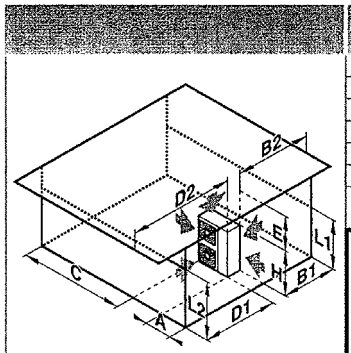
9 Installation

9 - 1 Service space

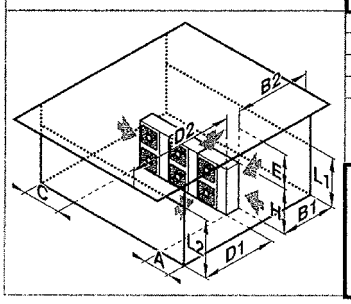
EBHQ011-016AA6V3

A. Non stacked installation

Legend Unit: mm



							A	B1	B2	C	D1	D2	E	L1/L2	
✓								≥50(100)							
✓		✓	✓				≥100	≥100		≥100					
✓				✓				≥100				≤500	≥1000		
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000		
	✓										≥500				
	✓			✓					≤500		≥500		≥1000		
✓	✓				L1<L2			≥50(100)			≥500				
					L2<L1			≥50(100)			≥500				
✓	✓			✓	L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H	1
											≥1000			0<L1≤1/2H	
						H<L1		L1≤H							
					L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H	
								≥100(200)						1/2H<L2≤H	
						H<L2		L2≤H							
✓		✓	✓				≥200	≥200(300)		≥1000					
✓		✓	✓	✓			≥200	≥200(300)		≥1000		≤500	≥1000		
	✓										≥1000				
	✓			✓					≤500		≥1000		≥1000		
✓	✓				L1<L2			≥200(300)			≥1000				
					L2<L1			≥150(250)			≥1000			0<L2≤1/2H	
								≥200(300)			(1500)			1/2H<L2≤H	
✓	✓			✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H	1
											≥1250			1/2H<L1≤H	
						H<L1		L1≤H							
					L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H	2
								≥200(300)						1/2H<L2≤H	
						H<L2		L2≤H							



Suction side obstacle

Discharge side obstacle

Left side obstacle

Right side obstacle

Top side obstacle

✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

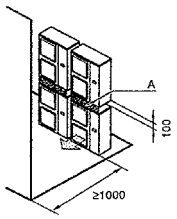
2 In these cases, only 2 units can be installed.

This situation is not allowed.

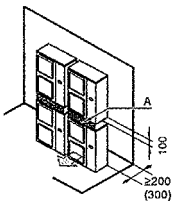
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



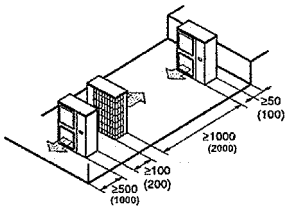
2. Obstacles exist in front of the air inlet



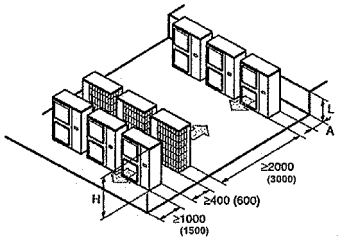
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



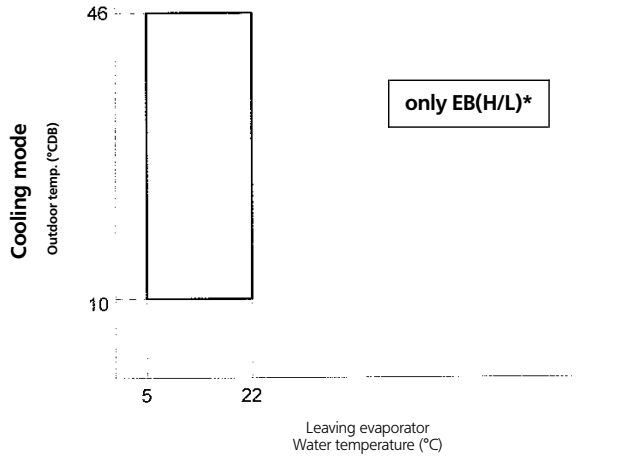
Relation of dimensions of H, A, and L are shown in the table below.

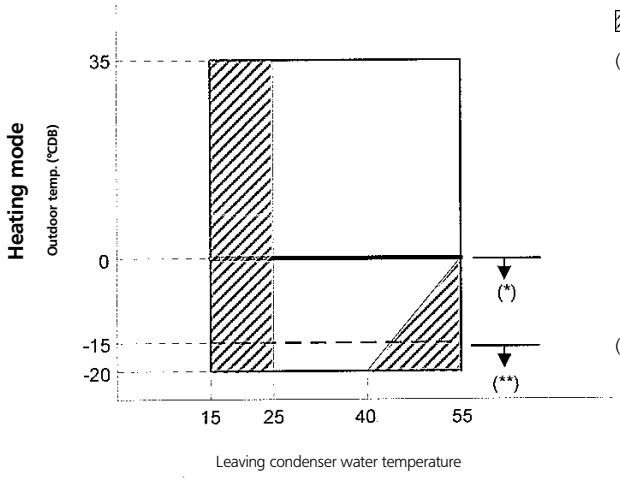
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

10 Operation range

EBHQ011-016AA6V3



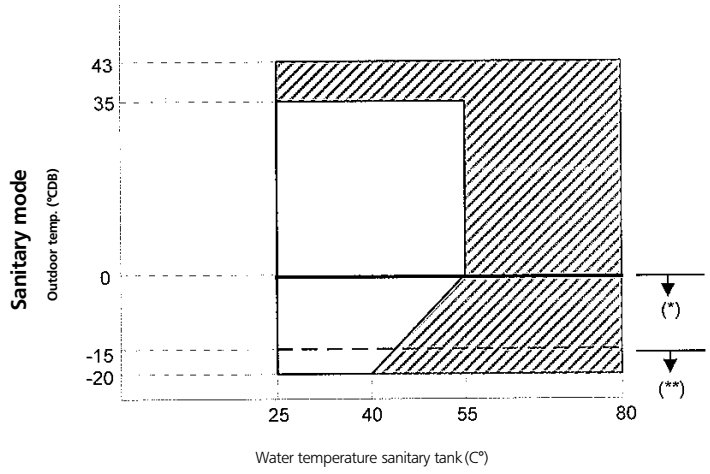


No heat pump operation, back up heater only

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

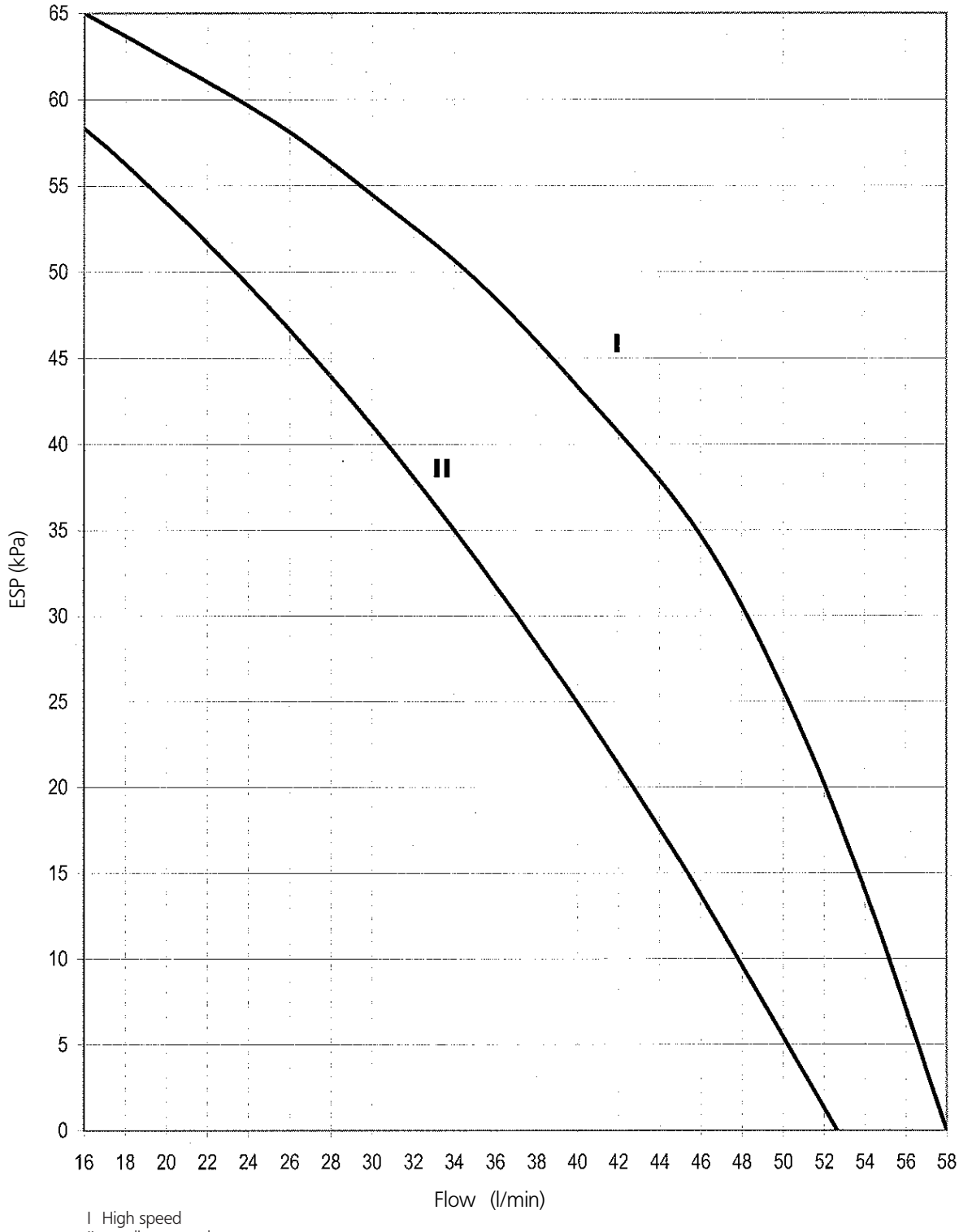
(**) only E(D/B)L*

4TW58013-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EBHQ011-016AA6V3



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EBHQ011-016AA6W1

1 Features

- Reversible monobloc
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Cooling capacity	Nominal	kW	12.85	15.99	16.73
	Heating PI	Nominal	kW	2.51	3.22	3.72
	Cooling PI	Nominal	kW	3.78	5.32	6.06
	COP	Nominal		4.46	4.35	4.30
	EER	Nominal		3.39	3.01	2.76
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Cooling capacity	Nominal	kW	10.00	12.50	13.10
	Heating PI	Nominal	kW	3.12	3.98	4.58
	Cooling PI	Nominal	kW	3.60	4.98	5.65
	COP	Nominal		3.48	3.29	3.29
	EER	Nominal		2.78	2.51	2.32
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Cooling - Ambient	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Cooling - Waterside	Min	°C	5	5	5
		Max	°C	22	22	22
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	49	51	53
	Cooling	Sound Power	dBA	65	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2-3 MAIN COMPONENTS				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	780	780	780
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT1G-VDYR@S		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
		Cooling	kPa	55.9	49.1	46.8
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
		Cooling	l/min	36.8	45.9	48.0
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		

2 Specifications

2-3 MAIN COMPONENTS			EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Expansion vessel	Volume	l	10	10	10
	Maximum water pressure	bar	3	3	3
	Pre pressure	bar	1.0	1.0	1.0
Water filter	Diameter perforations	mm	1	1	1
	Material		Brass		
Water circuit	Piping connections	inch	G5/4 (FEMALE)		
	Piping	inch	5/4"		
	Safety valve	bar	3	3	3
	Manometer		Yes		
	Drain valve / Fill valve		yes		
	Shut off valve		yes		
	Air purge valve		yes		
	Total water volume (6)	l	5.5	5.5	5.5

2-4 ELECTRICAL SPECIFICATIONS				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Power supply compressor component	Main Power	Name		W1		
		Phase		3N~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Heating (A)	A	5.8	5.8	5.8
	Maximum running current	Heating	A	14	14	14
		Cooling	A	13.5	13.5	13.5
Power supply compressor component	Current	Recomended fuses	A	20	20	20
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6W1		
Current back-up heater	Power Supply	Phase		3~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Running Current	Back-up heater	A	8.7	8.7	8.7
Running Current	Back-up heater + booster heater	+EK*V3	A	21.7(8.7+13)		
		+EK*Z2	A	16.2(8.7+7.5)		
Current back-up heater	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		
		+EK*Z2	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EBHQ011AA6W1	EBHQ014AA6W1	EBHQ016AA6W1
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EBHQ011-016AA6W1

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EBHQ011-016AA6W1

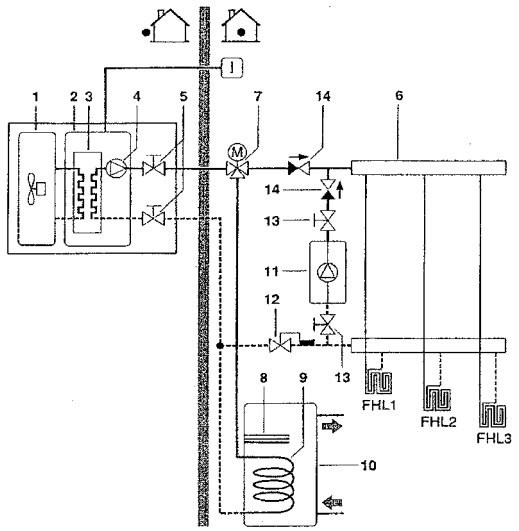
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

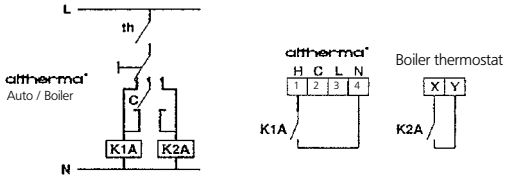
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EBHQ011-016AA6W1

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6W1	-20 (a)	5,86	2,21	5,51	2,42	5,39	2,66	5,25	2,95				
	-15	6,63	2,25	6,23	2,46	6,09	2,71	5,92	3,01	5,68	3,34		
	-7	8,13	2,29	7,66	2,51	7,51	2,77	7,32	3,08	7,03	3,43	6,53	3,81
	-2	9,28	2,29	8,76	2,52	8,61	2,79	8,41	3,11	8,11	3,46	7,55	3,85
	2	10,32	2,29	9,77	2,52	9,62	2,80	9,42	3,12	9,10	3,48	8,51	3,87
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	7,42	2,79	7,20	3,04	7,00	3,33	5,49	3,68				
	-15	8,29	2,85	8,00	3,11	7,72	3,41	7,60	3,76	7,57	4,16		
	-7	10,07	2,92	9,67	3,19	9,28	3,51	9,08	3,87	8,97	4,28	8,58	4,73
	-2	11,46	2,95	11,00	3,23	10,54	3,55	10,29	3,92	10,15	4,34	9,69	4,80
	2	12,75	2,96	12,23	3,25	11,72	3,57	11,43	3,96	11,27	4,38	10,75	4,84
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	8,47	3,20	8,34	3,49	8,22	3,83	6,50	4,21				
	-15	9,44	3,28	9,21	3,57	8,99	3,92	8,91	4,31	8,69	4,75		
	-7	11,44	3,37	11,08	3,67	10,73	4,03	10,53	4,43	10,17	4,90	9,81	5,41
	-2	13,01	3,41	12,58	3,72	12,14	4,09	11,89	4,50	11,43	4,97	11,00	5,49
	2	14,48	3,43	13,98	3,75	13,48	4,12	13,18	4,54	12,65	5,01	12,15	5,54
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6W1	-20 (a)	4,96	2,16	4,67	2,37	4,57	2,60	4,45	2,89				
	-15	5,61	2,20	5,27	2,41	5,16	2,66	5,01	2,95	4,81	3,27		
	-7	6,88	2,24	6,49	2,46	6,36	2,72	6,19	3,02	5,95	3,35	5,53	3,73
	-2	7,70	2,20	7,27	2,42	7,15	2,68	6,98	2,98	6,73	3,32	6,27	3,70
	2	8,57	2,19	8,11	2,42	7,99	2,69	7,82	3,00	7,56	3,34	7,06	3,72
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	6,31	2,70	6,13	2,94	5,96	3,23	4,67	3,56				
	-15	7,05	2,76	6,80	3,01	6,57	3,30	6,46	3,64	6,44	4,02		
	-7	8,57	2,83	8,23	3,09	7,89	3,40	7,72	3,75	7,63	4,14	7,30	4,58
	-2	9,11	2,67	8,74	2,92	8,38	3,21	8,18	3,55	8,07	3,93	7,70	4,34
	2	10,13	2,68	9,72	2,94	9,31	3,24	9,09	3,58	8,96	3,96	8,55	4,38
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	7,00	3,11	6,89	3,39	6,79	3,71	5,37	4,08				
	-15	7,80	3,18	7,61	3,46	7,43	3,80	7,37	4,18	7,18	4,61		
	-7	9,45	3,26	9,15	3,56	8,86	3,91	8,70	4,30	8,40	4,75	8,11	5,25
	-2	9,96	3,03	9,62	3,31	9,29	3,64	9,09	4,00	8,75	4,42	8,41	4,88
	2	11,08	3,05	10,69	3,34	10,31	3,67	10,08	4,04	9,68	4,46	9,29	4,93
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

4 Capacity tables

4 - 2 Cooling capacity tables

EBHQ011-016AA6W1

Maximum Cooling Capacity

Model	Tamb	20		25		30		35		40		45	
	LWE [°C]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]
EB(H/L)Q011AA6W1	7	11,08	2,70	10,99	2,97	10,62	3,26	10,00	3,60	9,16	3,97	8,14	4,38
	10	11,77	2,73	11,66	3,00	11,27	3,31	10,61	3,65	9,73	4,03	8,65	4,44
	13	12,93	2,76	12,81	3,04	12,38	3,35	11,66	3,70	10,70	4,08	9,39	4,65
	15	13,74	2,78	13,61	3,06	13,15	3,38	12,39	3,73	11,37	4,12	9,73	4,54
	18	15,17	2,81	14,66	3,10	13,87	3,42	12,85	3,78	11,61	4,18	9,85	4,18
	22	16,92	2,85	16,36	3,15	15,49	3,48	14,36	3,85	13,00	4,26	10,32	3,73
EB(H/L)Q014AA6W1	7	13,87	3,78	13,75	4,12	13,29	4,52	12,50	4,98	11,08	4,78	9,81	5,27
	10	14,92	3,84	14,79	4,20	14,28	4,61	13,43	5,07	11,92	4,86	10,56	5,35
	13	16,38	3,90	16,23	4,27	15,68	4,69	14,75	5,16	13,09	4,94	10,95	5,43
	15	17,39	3,95	17,23	4,32	16,64	4,75	15,66	5,22	13,91	5,00	11,35	5,30
	18	18,92	4,02	18,28	4,40	17,29	4,83	15,99	5,32	13,99	5,09	11,49	4,89
	22	21,07	4,11	20,37	4,51	19,28	4,95	17,85	5,44	15,65	5,21	12,05	4,36
EB(H/L)Q016AA6W1	7	14,52	4,30	14,44	4,70	13,95	5,15	13,10	5,65	11,57	5,39	9,84	5,28
	10	15,65	4,39	15,53	4,80	14,99	5,26	14,07	5,76	12,43	5,49	10,59	5,37
	13	17,19	4,48	17,05	4,90	16,45	5,36	15,44	5,87	13,64	5,59	10,98	5,45
	15	18,26	4,54	18,09	4,97	17,46	5,43	16,39	5,95	14,49	5,66	11,38	5,32
	18	19,87	4,64	19,20	5,07	18,14	5,54	16,73	6,06	14,57	5,76	11,52	4,91
	22	22,14	4,77	21,39	5,21	20,21	5,70	18,66	6,22	16,28	5,91	12,08	4,38

3TW58012-1A

SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)
LWE : Leaving Water Evaporator temperature (°C)
LWC : Leaving Water Condensor temperature (°C)
Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

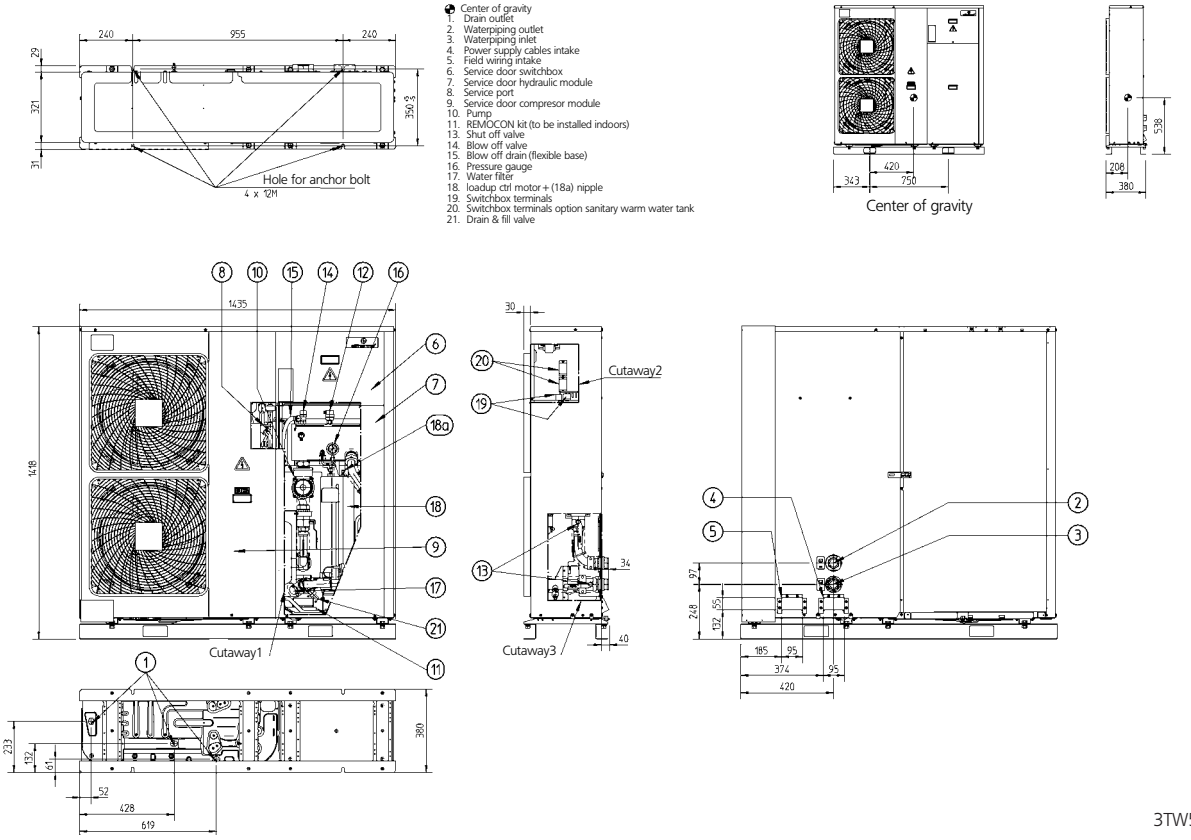
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

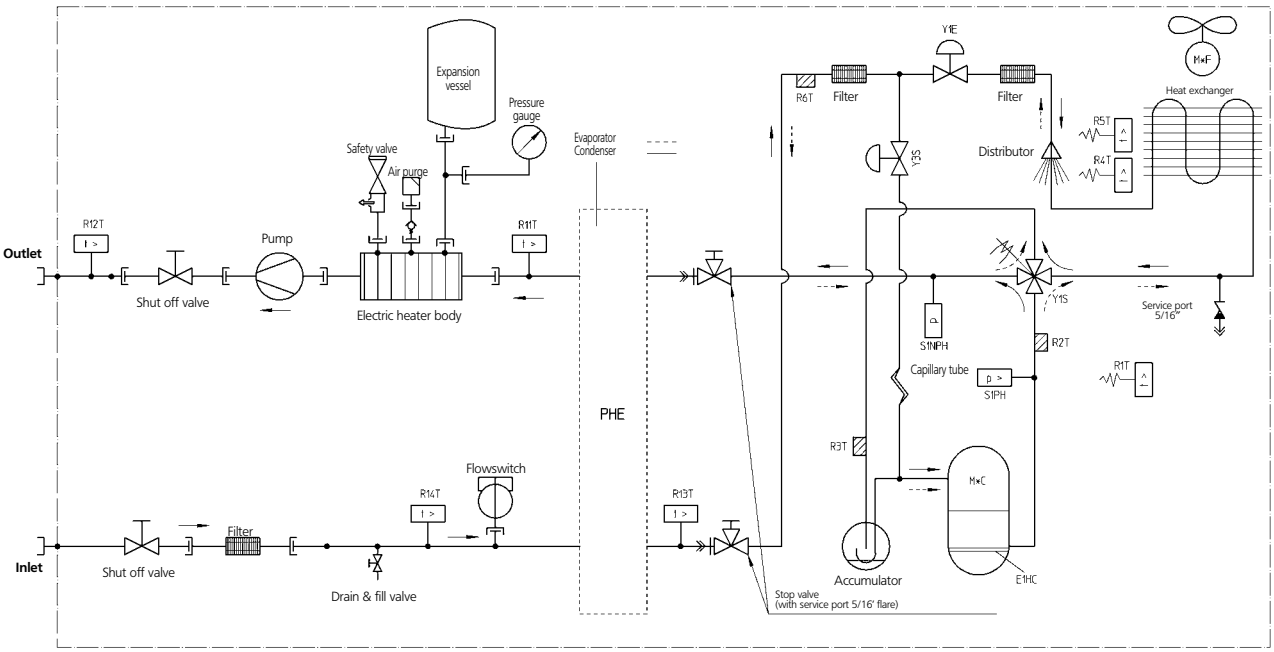
EBHQ011-016AA6W1



6 Piping diagram

6 - 1 Piping diagram

EBHQ011-016AA6W1



R1T	: Thermistor (Air)	Y1S	: 4-way valve
R2T	: Thermistor (discharge)	Y3S	: Injection valve
R3T	: Thermistor (Suction)	S1PH	: High pressure switch
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor
R5T	: Thermistor (middle)	M*C	: Compressor
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor
E1HC	: Crankcase heater	R14T	: Inlet water thermistor

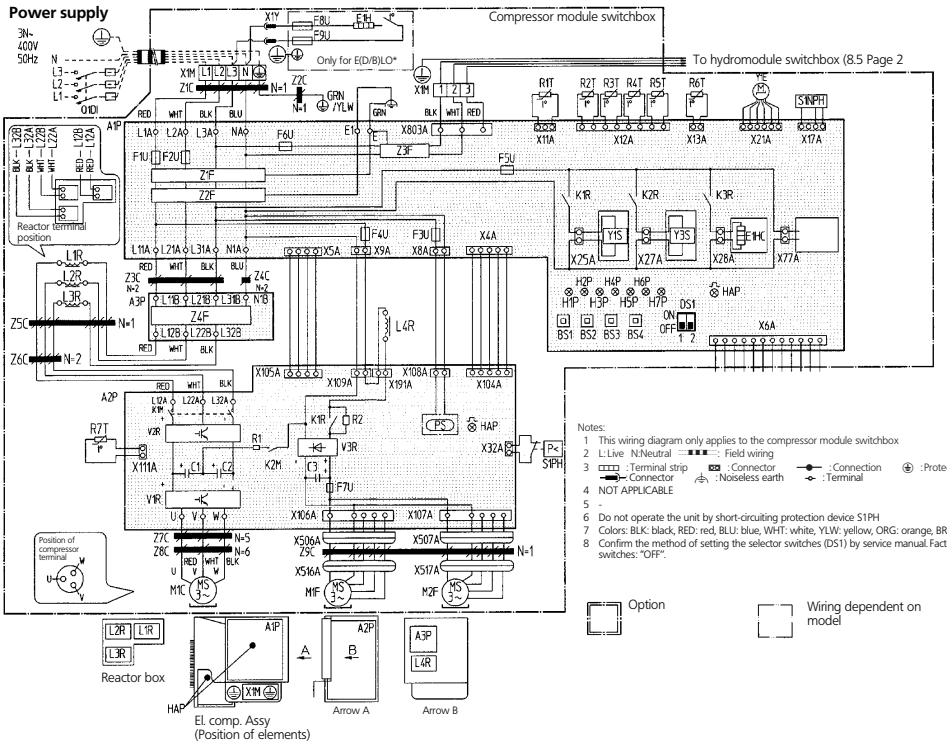
Heating
Cooling

3TW58135-1A

7 Wiring diagram

7 - 1 Wiring diagram

EBHQ011-016AA6W1



Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral : Field wiring
3 : Terminal strip : Connector : Connection : Protective earth (screw)
Connector : Noiseless earth : Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (T 31,5A/250V)
F2U	Fuse (T 31,5A/250V)
F3U	Fuse (T 6.3A/250V)
F4U	Fuse (T 6,3A/250V)
F5U	Fuse (T 6,3A/250V)
F6U	Fuse (T 6,3A/250V)
F7U	Fuse (T 5,0A/250V)
F8U, F9U	Fuse (T 1,0A/250V)
H1P–7P (A1P)	Pilotlamp (service monitor - orange)
HAP (A1P)	Pilotlamp (service monitor - green)
HAP (A2P)	Pilotlamp (service monitor - green)
K1M–K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R–L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Earth leakage protector
R1–R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
V1R, V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C–Z9C	Noise filter
Z1F–Z4F	Noise filter
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

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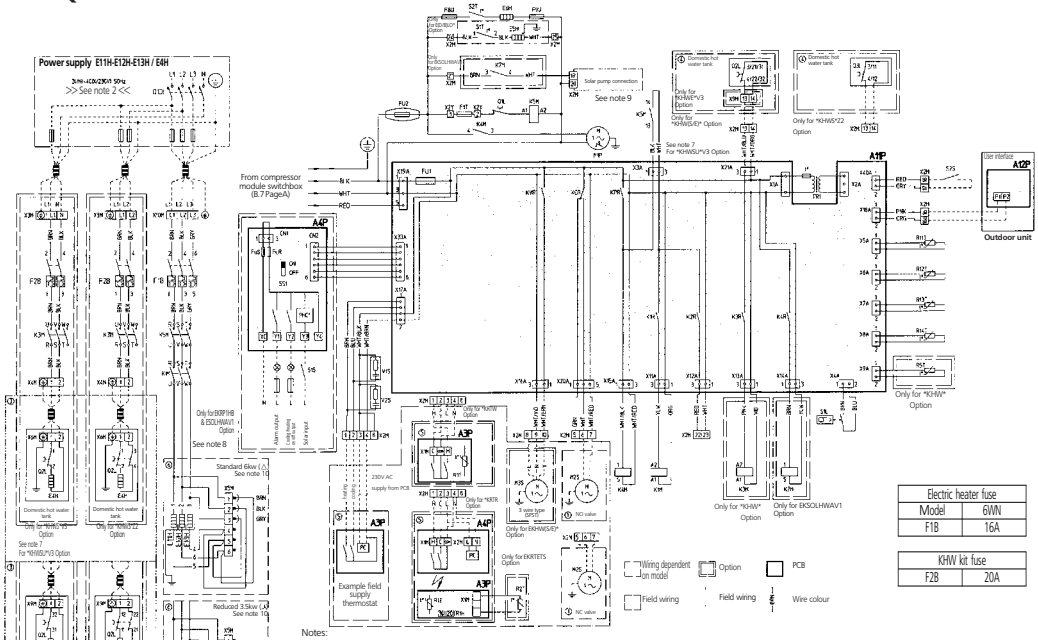
EBHQ011-016AA6W1



Electric heater fuse	
Model	6WN
F1B	16A

KHW kit fuse	
F2B	20A

Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N,L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P(*KRTR)	: Solar/remote alarm PCB
A4P(EKRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L/Q3L	: Thermal protector 1/2Booster heater
R1H (*KRTR))	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

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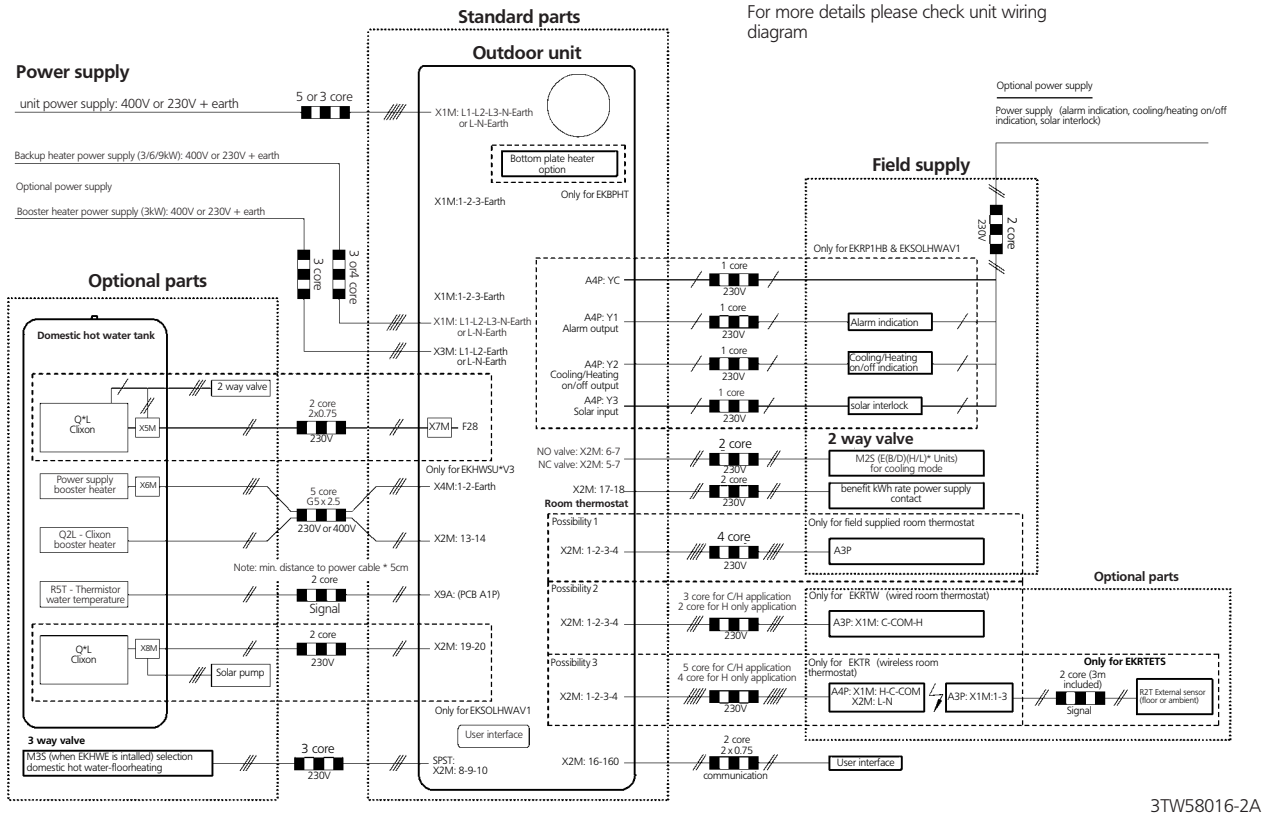
7 Wiring diagram

7 - 2 External connection diagram

EBHQ011-016AA6W1 Electrical connection diagram Altherma

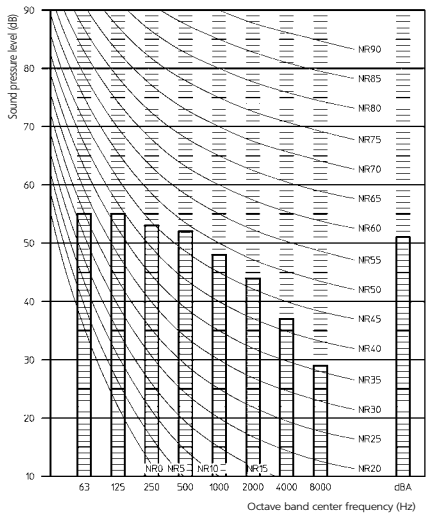


8 Sound data

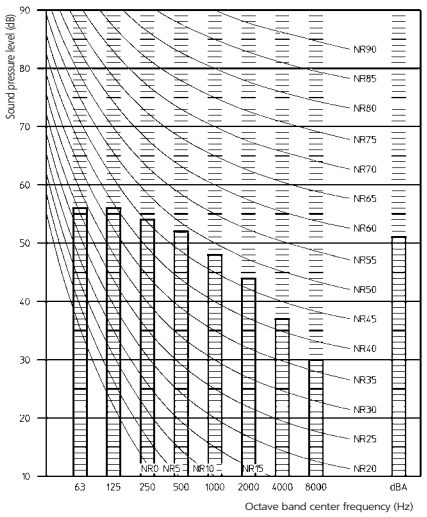
8 - 1 Sound pressure spectrum

EBHQ011-016AA6W1

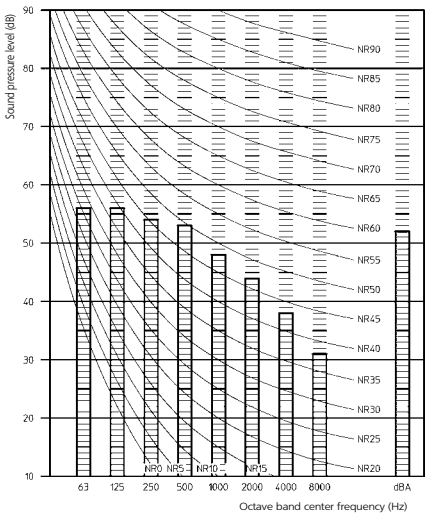
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

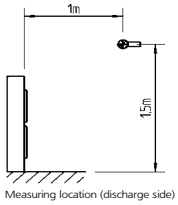


E(D/B)(H/L)Q016* HEATING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

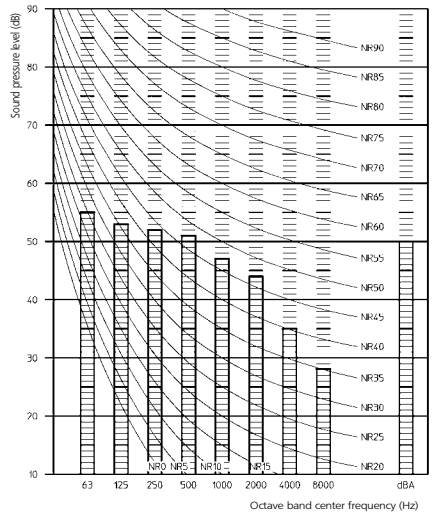


Measuring location (discharge side)

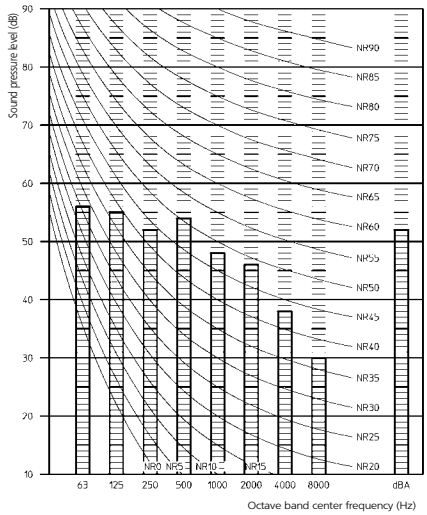
3TW58017-2

EBHQ011-016AA6W1

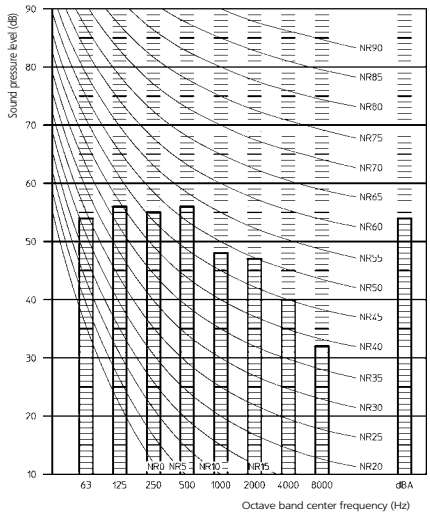
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

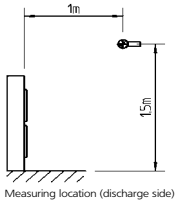


E(D/B)(H/L)Q016* COOLING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

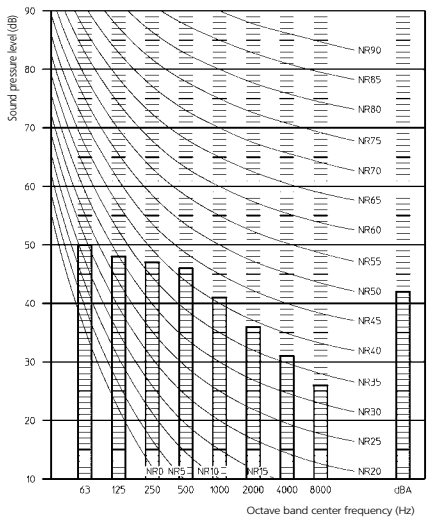
3TW58017-1

8 Sound data

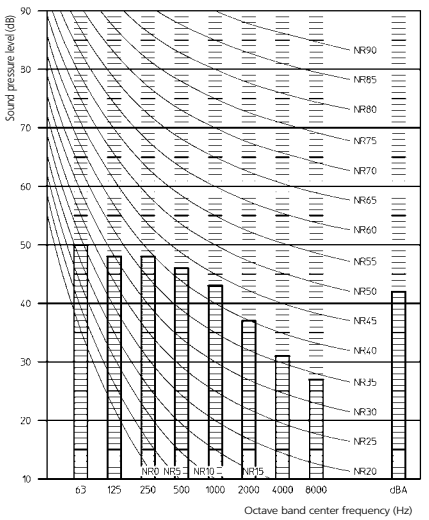
8 - 2 Sound pressure night quiet mode

EBHQ011-016AA6W1

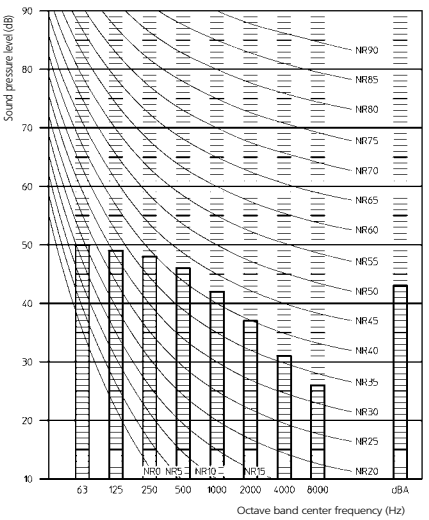
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

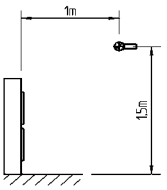


E(D/B)(H/L)Q016* HEATING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

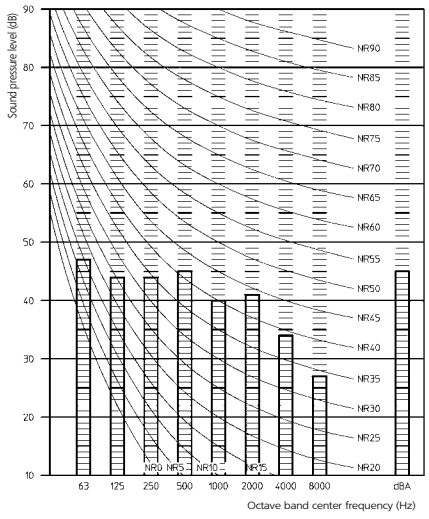


Measuring location (discharge side)

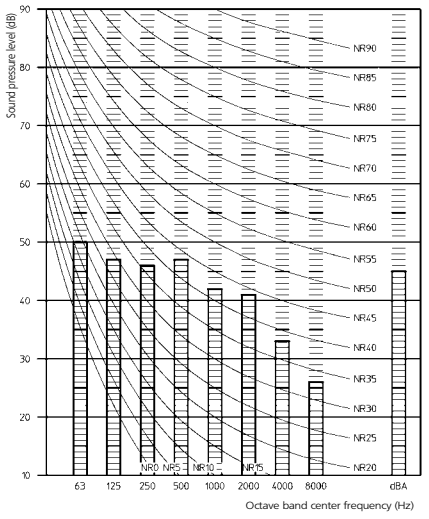
3TW58017-4

EBHQ011-016AA6W1

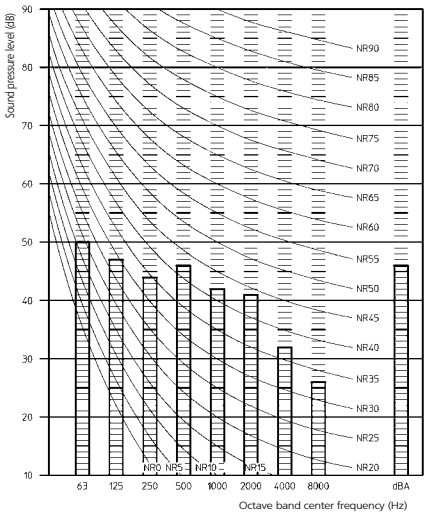
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

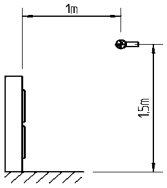


E(D/B)(H/L)Q016* COOLING



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

3TW58017-3

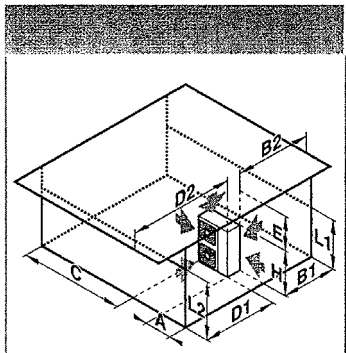
9 Installation

9 - 1 Service space

EBHQ011-016AA6W1

A. Non stacked installation

Legend Unit: mm



							A	B1	B2	C	D1	D2	E	L1/L2
✓								≥50(100)						
✓		✓	✓				≥100	≥100		≥100				
✓				✓				≥100				≤500	≥1000	
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000	
	✓										≥500			
	✓			✓					≤500		≥500		≥1000	
✓	✓				L1<L2			≥50(100)			≥500			
					L2<L1			≥50(100)			≥500			
✓	✓			✓	L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H
											≥1000			0<L1≤1/2H
						H<L1		L1≤H						1
					L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H
								≥100(200)						1/2H<L2≤H
						H<L2		L2≤H						
✓		✓	✓				≥200	≥200(300)		≥1000				
✓		✓	✓	✓			≥200	≥200(300)		≥1000		≤500	≥1000	
	✓										≥1000			
	✓			✓					≤500		≥1000		≥1000	
✓	✓				L1<L2			≥200(300)			≥1000			
					L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
✓	✓			✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H
											≥1250			1/2H<L1≤H
						H<L1		L1≤H						1
					L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
						H<L2		L2≤H						2

Suction side obstacle

Discharge side obstacle

Left side obstacle

Right side obstacle

Top side obstacle

✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

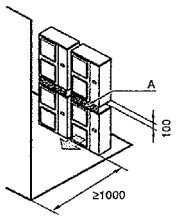
2 In these cases, only 2 units can be installed.

This situation is not allowed.

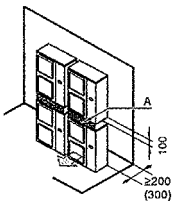
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



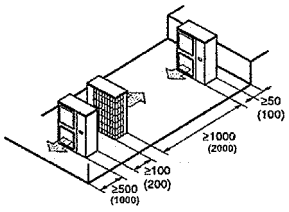
2. Obstacles exist in front of the air inlet



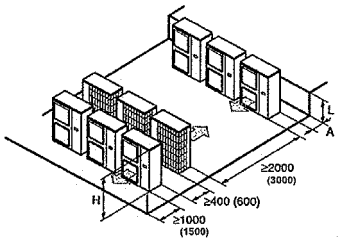
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



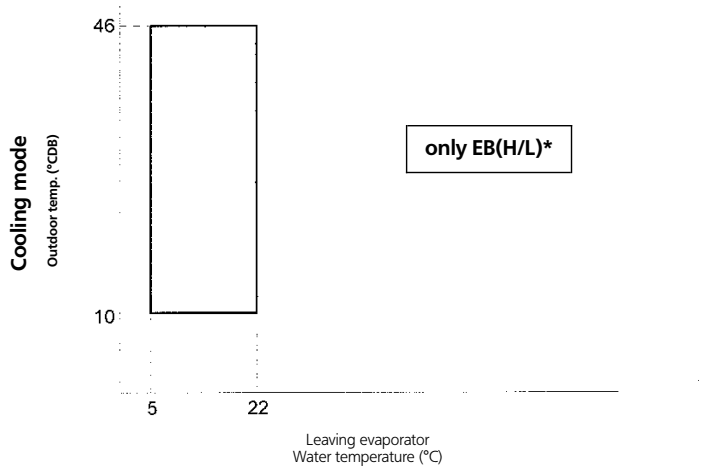
Relation of dimensions of H, A, and L are shown in the table below.

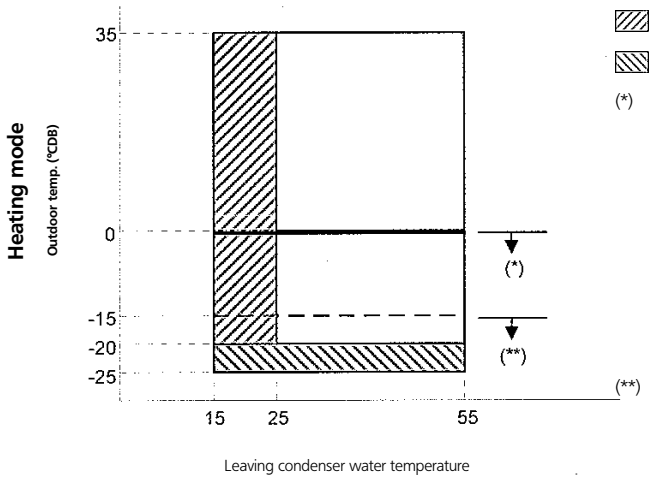
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

10 Operation range

EBHQ011-016AA6W1





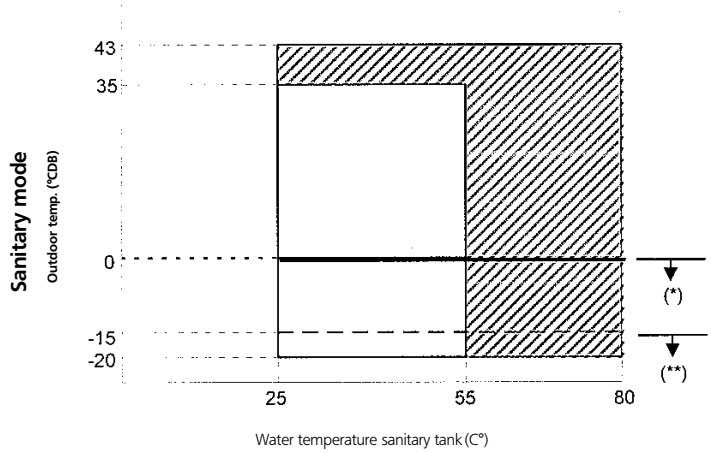
No heat pump operation, back up heater only

operation possible, but no guarantee of capacity

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

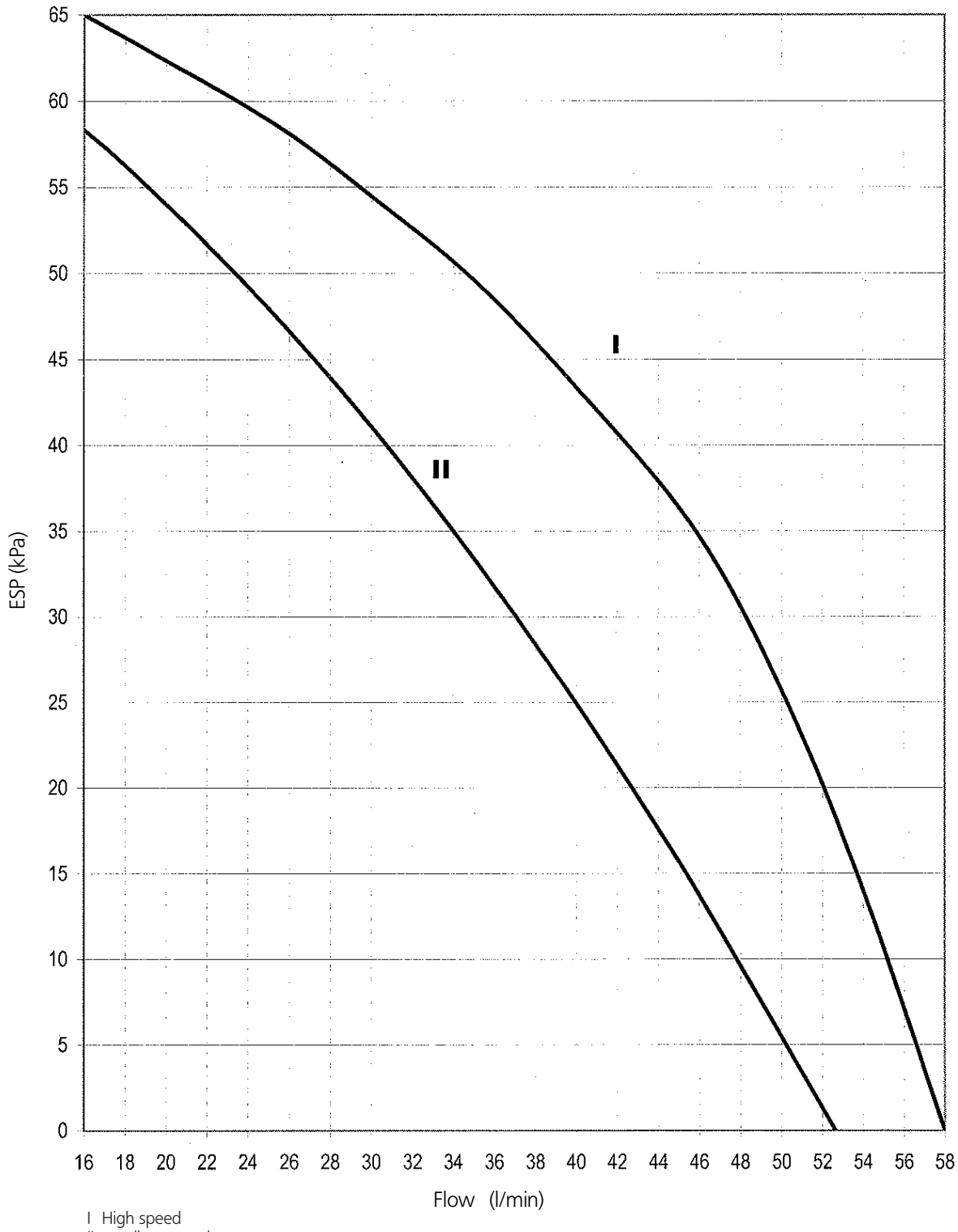
(**) only E(D/B)L*

4TW58133-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EBHQ011-016AA6W1



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EBLQ011-016AA6V3

1 Features

- Reversible monobloc with bottom plate heater
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Cooling capacity	Nominal	kW	12.85	15.99	16.73
	Heating PI	Nominal	kW	2.47	3.20	3.79
	Cooling PI	Nominal	kW	3.78	5.65	6.28
	COP	Nominal		4.54	4.37	4.22
	EER	Nominal		3.39	2.83	2.66
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Cooling capacity	Nominal	kW	10.00	12.50	13.10
	Heating PI	Nominal	kW	3.22	3.91	4.62
	Cooling PI	Nominal	kW	3.60	5.30	5.85
	COP	Nominal		3.37	3.35	3.26
	EER	Nominal		2.78	2.36	2.24
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Cooling - Ambient	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Cooling - Waterside	Min	°C	5	5	5
		Max	°C	22	22	22
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	51	51	52
	Cooling	Sound Power	dBA	65	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Refrigerant Oil	Type			Daphne FVC68D		
	Charged Volume		l	1.0	1.0	1.0
Defrost Method				Pressure equalising		
Defrost Control				Sensor for outdoor heat exchanger temperature		
Capacity Control Method				Inverter controlled		
Safety Devices				High pressure switch		
				Fan motor thermal protector		
				Fuse		
Notes				The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
				Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
				15°-25°C: BUH only, no heat pump operation = during commisioning		
				including piping + PHE + back-up heater / excluding expansion vessel		
				E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2-3 MAIN COMPONENTS				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m³/min	90	90	90
	Cooling	High	m³/min	96	100	97
Fan	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	780	780	780
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT100G-VD		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
		Cooling	kPa	55.9	49.1	46.8
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
		Cooling	l/min	36.8	45.9	48.0
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		

2 Specifications

2-3 MAIN COMPONENTS			EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Expansion vessel	Volume	l	10	10	10
	Maximum water pressure	bar	3	3	3
	Pre pressure	bar	1.0	1.0	1.0
Water filter	Diameter perforations	mm	1	1	1
	Material		Brass		
Water circuit	Piping connections	inch	G5/4 (FEMALE)		
	Piping	inch	5/4"		
	Safety valve	bar	3	3	3
	Manometer		Yes		
	Drain valve / Fill valve		yes		
	Shut off valve		yes		
	Air purge valve		yes		
	Total water volume (6)	l	5.5	5.5	5.5

2-4 ELECTRICAL SPECIFICATIONS				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Power supply compressor component	Main Power	Name		V3		
		Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Current	Minimum Ssc value	kVa	Equipment complying with EN/IEC 61000-3-12(×)		
Current	Maximum running current	Cooling	A	22.8	27.4	31.9
Power supply compressor component	Current	Recomended fuses	A	32	32	32
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6V3		
Current back-up heater	Power Supply	Phase		1~		
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Running Current	Back-up heater	A	26	26	26
Running Current	Back-up heater + booster heater	+EK*V3	A	39(26+13)		
Current back-up heater	Z-max	Back-up heater	A	0.29	0.29	0.29
		Back-up heater + booster heater	A	0.17	0.17	0.17
	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EBLQ011AA6V3	EBLQ014AA6V3	EBLQ016AA6V3
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EBLQ011-016AAV3

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EBLQ011-016AA6V3

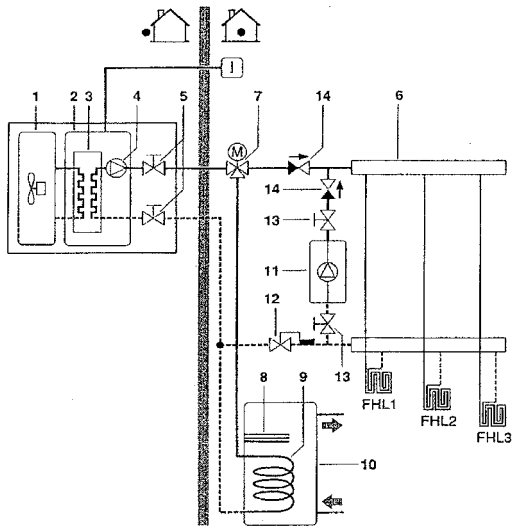
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

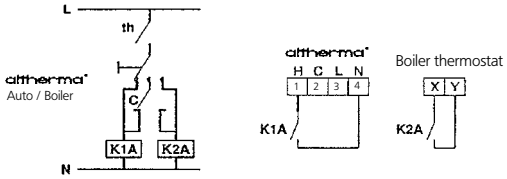
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EBLQ011-016AA6V3

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6V3	-20 (a)	5,86	2,17	5,51	2,37								
	-15	6,63	2,21	6,23	2,42	6,09	2,67						
	-7	8,13	2,24	7,66	2,47	7,51	2,72	7,32	3,18				
	-2	9,28	2,25	8,76	2,48	8,61	2,74	8,41	3,21	8,11	3,57		
	2	10,32	2,25	9,77	2,48	9,62	2,75	9,42	3,22	9,10	3,59	8,51	4,00
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	7,42	2,78	7,20	3,03								
	-15	8,29	2,84	8,00	3,10	7,72	3,40						
	-7	10,07	2,91	9,67	3,18	9,28	3,49	9,08	3,80				
	-2	11,46	2,94	11,00	3,21	10,54	3,54	10,29	3,85	10,13	4,26		
	2	12,75	2,95	12,23	3,23	11,72	3,56	11,43	3,88	11,25	4,30	10,73	4,75
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	8,47	3,27	8,34	3,56								
	-15	9,44	3,34	9,21	3,64	8,99	3,99						
	-7	11,44	3,43	11,08	3,74	10,73	4,11	10,53	4,47				
	-2	13,01	3,47	12,58	3,79	12,14	4,17	11,89	4,54	11,45	5,01		
	2	14,48	3,49	13,98	3,82	13,48	4,20	13,18	4,58	12,67	5,06	12,17	5,59
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6V3	-20 (a)	4,96	2,13	4,67	2,32								
	-15	5,61	2,16	5,27	2,37	5,16	2,61						
	-7	6,88	2,20	6,49	2,41	6,36	2,67	6,19	3,12				
	-2	7,70	2,16	7,27	2,38	7,15	2,63	6,98	3,08	6,73	3,43		
	2	8,57	2,16	8,11	2,38	7,99	2,64	7,82	3,09	7,56	3,45	7,06	3,84
	7	11,80	2,23	11,20	2,47	11,06	2,75	10,87	3,22	10,53	3,60	9,88	4,02
	12	12,80	2,16	12,18	2,40	12,07	2,68	11,89	3,16	11,57	3,54	10,89	3,96
	15	13,84	2,13	13,20	2,38	13,10	2,67	12,93	3,15	12,60	3,53	11,89	3,95
	20	15,73	2,08	15,04	2,33	14,97	2,62	14,82	3,11	14,07	3,50	13,32	3,92
E(D/B)(H/L)Q014AA6V3	-20 (a)	6,31	2,69	6,13	2,93								
	-15	7,05	2,75	6,80	3,00	6,57	3,29						
	-7	8,57	2,82	8,23	3,08	7,89	3,38	7,72	3,68				
	-2	9,11	2,66	8,74	2,91	8,38	3,20	8,18	3,49	8,05	3,86		
	2	10,13	2,67	9,72	2,93	9,31	3,22	9,09	3,52	8,95	3,89	8,53	4,30
	7	14,59	2,95	14,00	3,20	13,42	3,58	13,10	3,91	12,89	4,33	12,30	4,79
	12	15,44	2,86	14,84	3,15	14,23	3,48	13,91	3,80	13,70	4,22	13,07	4,68
	15	16,73	2,84	16,09	3,14	15,45	3,48	15,10	3,81	14,88	4,22	14,21	4,68
	20	19,09	2,81	18,38	3,11	17,67	3,46	17,30	3,79	16,58	4,22	15,85	4,69
E(D/B)(H/L)Q016AA6V3	-20 (a)	7,00	3,17	6,89	3,45								
	-15	7,80	3,24	7,61	3,53	7,43	3,87						
	-7	9,45	3,33	9,15	3,63	8,86	3,99	8,70	4,34				
	-2	9,96	3,09	9,62	3,38	9,29	3,71	9,09	4,04	8,76	4,46		
	2	11,08	3,11	10,69	3,40	10,31	3,74	10,08	4,08	9,69	4,50	9,31	4,98
	7	16,58	3,51	16,00	3,79	15,42	4,24	15,06	4,62	14,47	5,11	13,88	5,64
	12	17,29	3,41	16,69	3,75	16,08	4,13	15,71	4,51	15,09	4,98	14,47	5,51
	15	18,75	3,41	18,10	3,75	17,45	4,13	17,05	4,52	16,38	5,00	15,71	5,53
	20	21,42	3,40	20,70	3,74	19,98	4,13	19,53	4,52	18,77	5,01	18,01	5,54

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

4 Capacity tables

4 - 2 Cooling capacity tables

EBLQ011-016AA6V3

Maximum Cooling Capacity

Model	Tamb	20		25		30		35		40		45	
	LWE [°C]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]
EB(H/L)Q011AA6V3	**7**	11,08	2,70	10,99	2,97	10,62	3,26	10,00	3,60	9,16	3,97	8,14	4,38
	10	11,77	2,73	11,66	3,00	11,27	3,31	10,61	3,65	9,73	4,03	8,65	4,44
	13	12,93	2,76	12,81	3,04	12,38	3,35	11,66	3,70	10,70	4,08	9,39	4,65
	15	13,74	2,78	13,61	3,06	13,15	3,38	12,39	3,73	11,37	4,12	9,73	4,54
	18	15,17	2,81	14,66	3,10	13,87	3,42	12,85	3,78	11,61	4,18	9,85	4,18
	22	16,92	2,85	16,36	3,15	15,49	3,48	14,36	3,85	13,00	4,26	10,32	3,73
EB(H/L)Q014AA6V3	**7**	13,87	4,02	13,75	4,39	13,29	4,81	12,50	5,30	11,08	5,08	9,81	5,60
	10	14,92	4,08	14,79	4,46	14,28	4,90	13,43	5,39	11,92	5,17	10,56	5,70
	13	16,38	4,15	16,23	4,54	15,68	4,99	14,75	5,49	13,09	5,26	10,95	5,78
	15	17,39	4,20	17,23	4,60	16,64	5,05	15,66	5,55	13,91	5,32	11,35	5,64
	18	18,92	4,27	18,28	4,68	17,29	5,14	15,99	5,65	13,99	5,41	11,49	5,20
	22	21,07	4,37	20,37	4,79	19,28	5,27	17,85	5,79	15,65	5,54	12,05	4,64
EB(H/L)Q016AA6V3	**7**	14,52	4,45	14,44	4,87	13,95	5,33	13,10	5,85	11,57	5,58	9,84	5,47
	10	15,65	4,54	15,53	4,97	14,99	5,44	14,07	5,96	12,43	5,68	10,59	5,56
	13	17,19	4,64	17,05	5,07	16,45	5,55	15,44	6,08	13,64	5,79	10,98	5,65
	15	18,26	4,71	18,09	5,14	17,46	5,63	16,39	6,16	14,49	5,86	11,38	5,51
	18	19,87	4,81	19,20	5,25	18,14	5,74	16,73	6,28	14,57	5,97	11,52	5,08
	22	22,14	4,95	21,39	5,40	20,21	5,90	18,66	6,44	16,28	6,12	12,08	4,53

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)
LWE : Leaving Water Evaporator temperature (°C)
LWC : Leaving Water Condensor temperature (°C)
Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

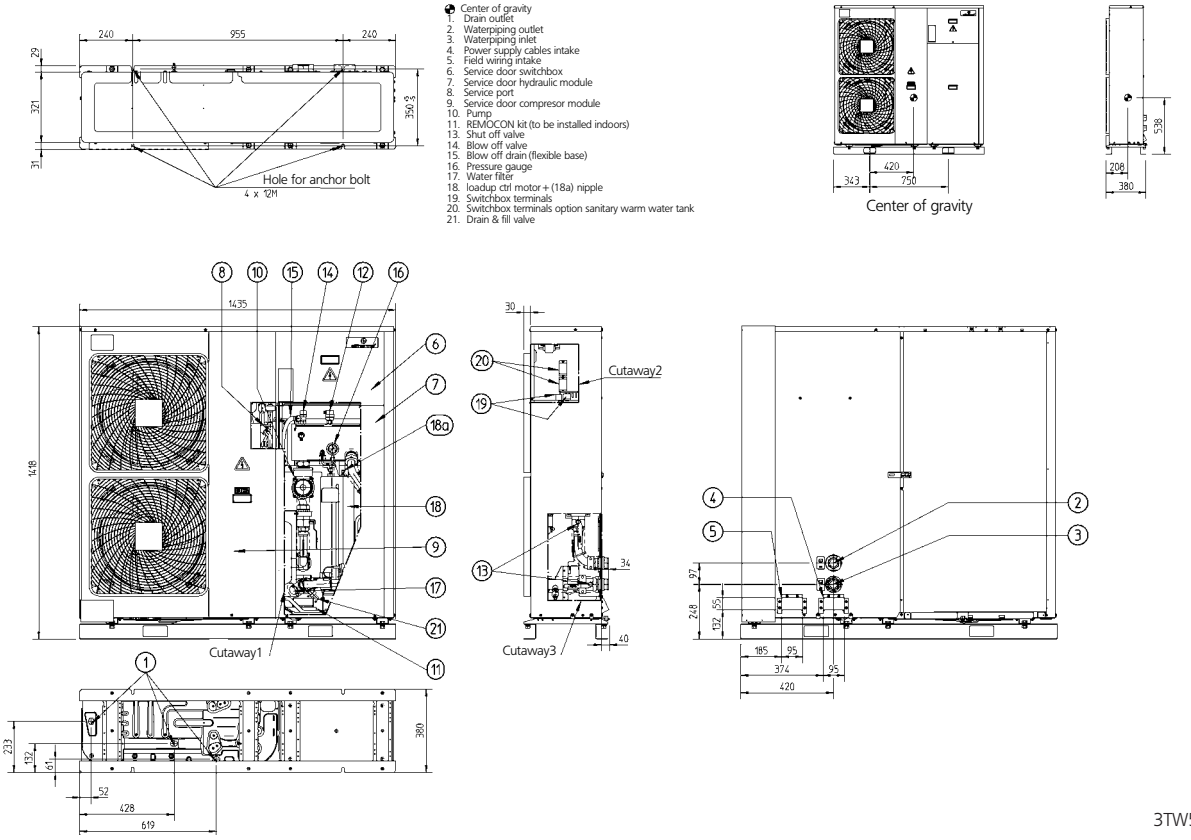
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

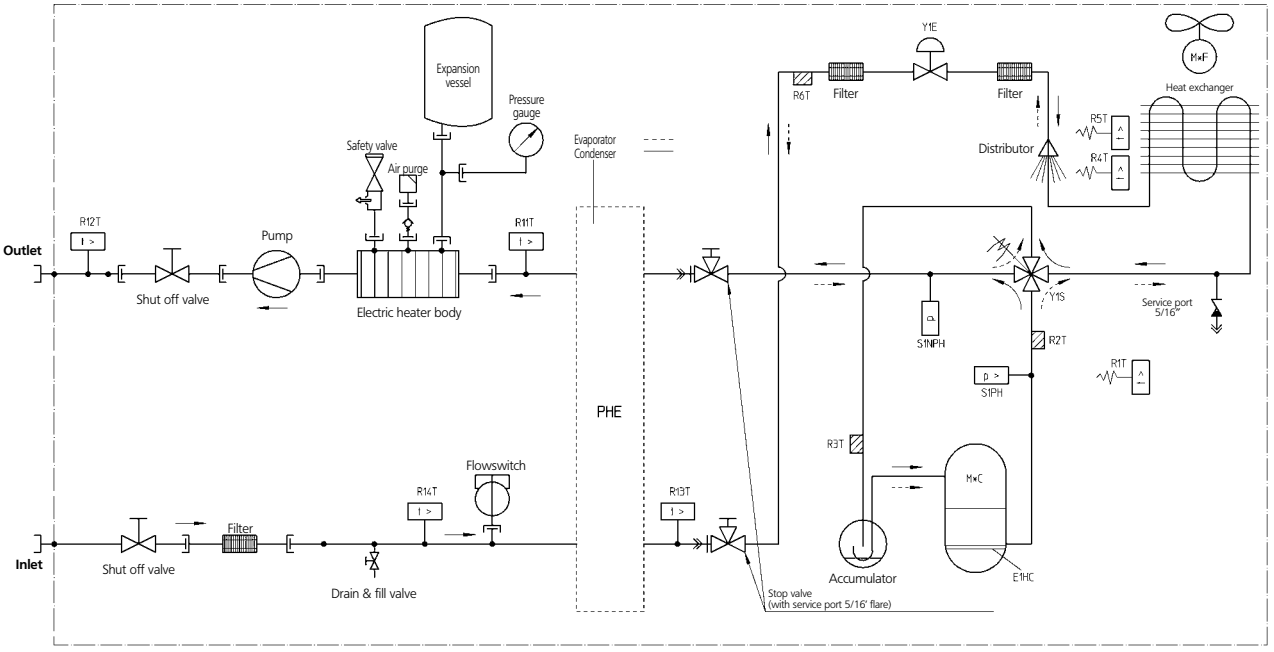
EBLQ011-016AA6V3



6 Piping diagram

6 - 1 Piping diagram

EBLQ011-016AA6V3



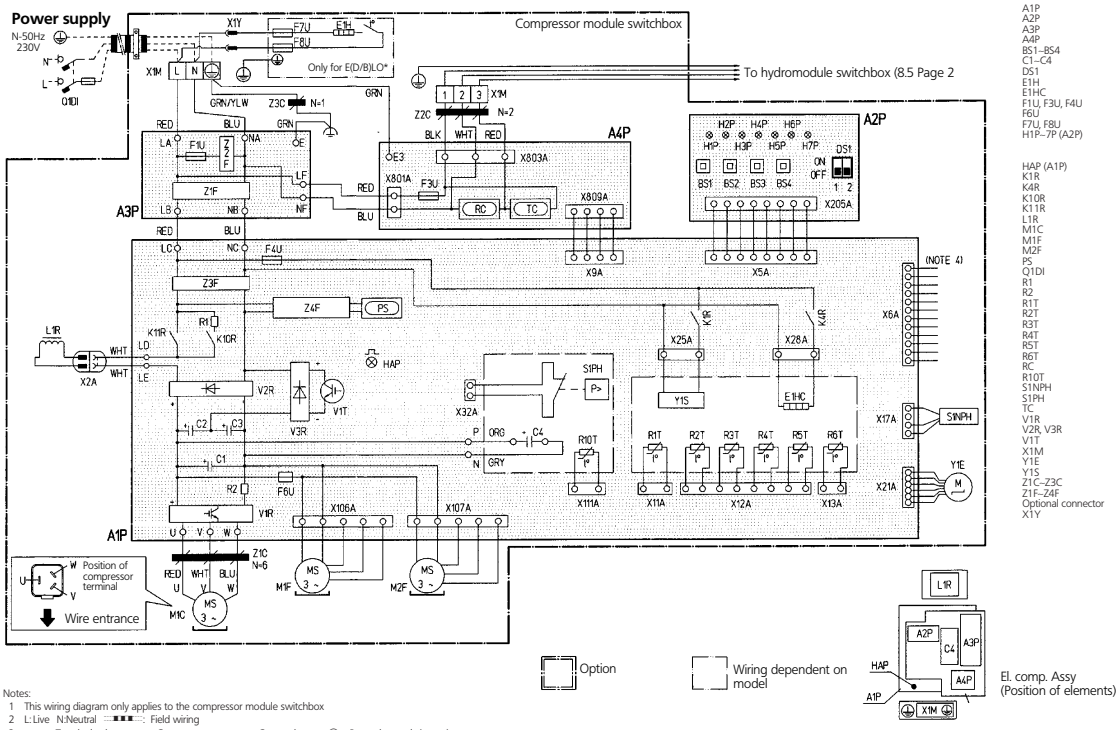
R1T	: Thermistor (Air)	Y1S	: 4-way valve	——→	Heating
R2T	: Thermistor (discharge)	Y3S	: Injection valve	- - - - →	Cooling
R3T	: Thermistor (Suction)	S1PH	: High pressure switch		
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor		
R5T	: Thermistor (middle)	M*C	: Compressor		
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor		
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor		
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor		
E1HC	: Crankcase heater	R14T	: Inlet water thermistor		

3TW58015-1A

7 Wiring diagram

7 - 1 Wiring diagram

EBLQ011-016AA6V3



A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
A4P	Printed circuit board
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1H	Bottomplate heater
E1HC	Crankcase heater
F1U, F3U, F4U	Fuse (T 6.3A/250V)
F6U	Fuse (T 5.0A/250V)
F7U, F8U	Fuse (F 1,0A/250V)
H1P–7P (A2P)	Light Emit. Diode (Serv. Monitor-Orange) Prepare, Test ———— Flickering Malfunction Detection — Light up
HAP (A1P)	Light emitting diode (service monitor green)
K1R	Magnetic relay (Y1S)
K4R	Magnetic relay (E1HC)
K10R	Magnetic relay
K11R	Magnetic relay
L1R	Reactor
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Field earth leakage breaker (300mA)
R1	Resistor
R2	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
RC	Signal receiver circuit
R10T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
TC	Signal transmission circuit
V1R	Power module
V2R, V3R	Diode module
V1T	IGBT
X1M	Terminal strip (Power supply)
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Z1C–Z3C	Noise filter (ferrite core)
Z1F–Z4F	Noise filter
Optional connector	
X1Y	Connector

Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral Field wiring
3 :Terminal strip :Connector :Connection :Protective earth (screw)
Connector :Noiseless earth :Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

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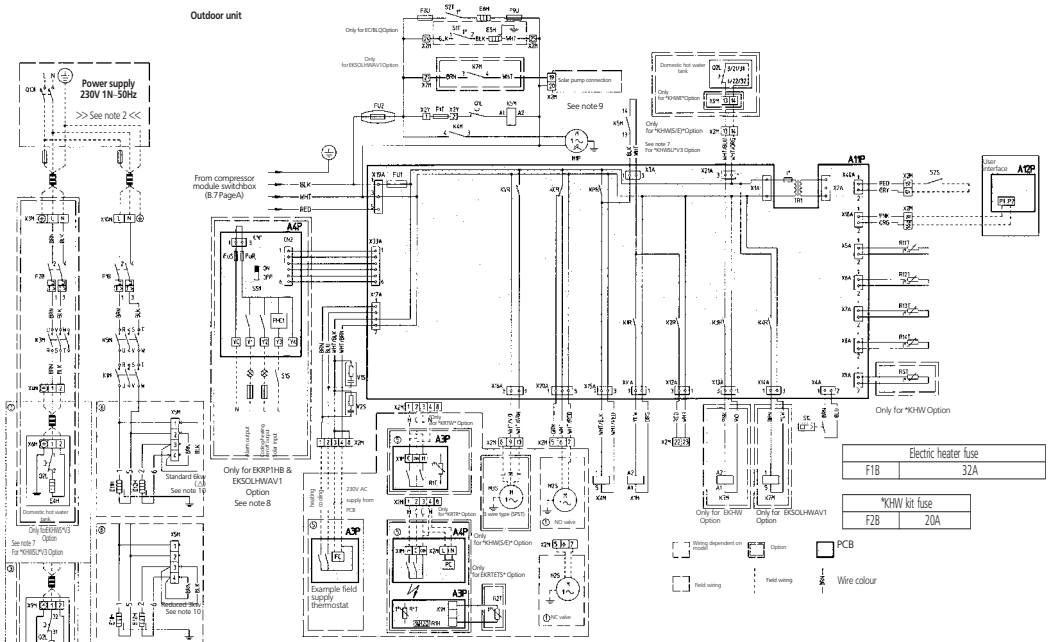
EBLQ011-016AA6V3



A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P (EKRTR)	: Solar/remote alarm PCB
A4P (*KRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L	: Thermal protector 1/2Booster heater
R1H (*KRTR)	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T (*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N.L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

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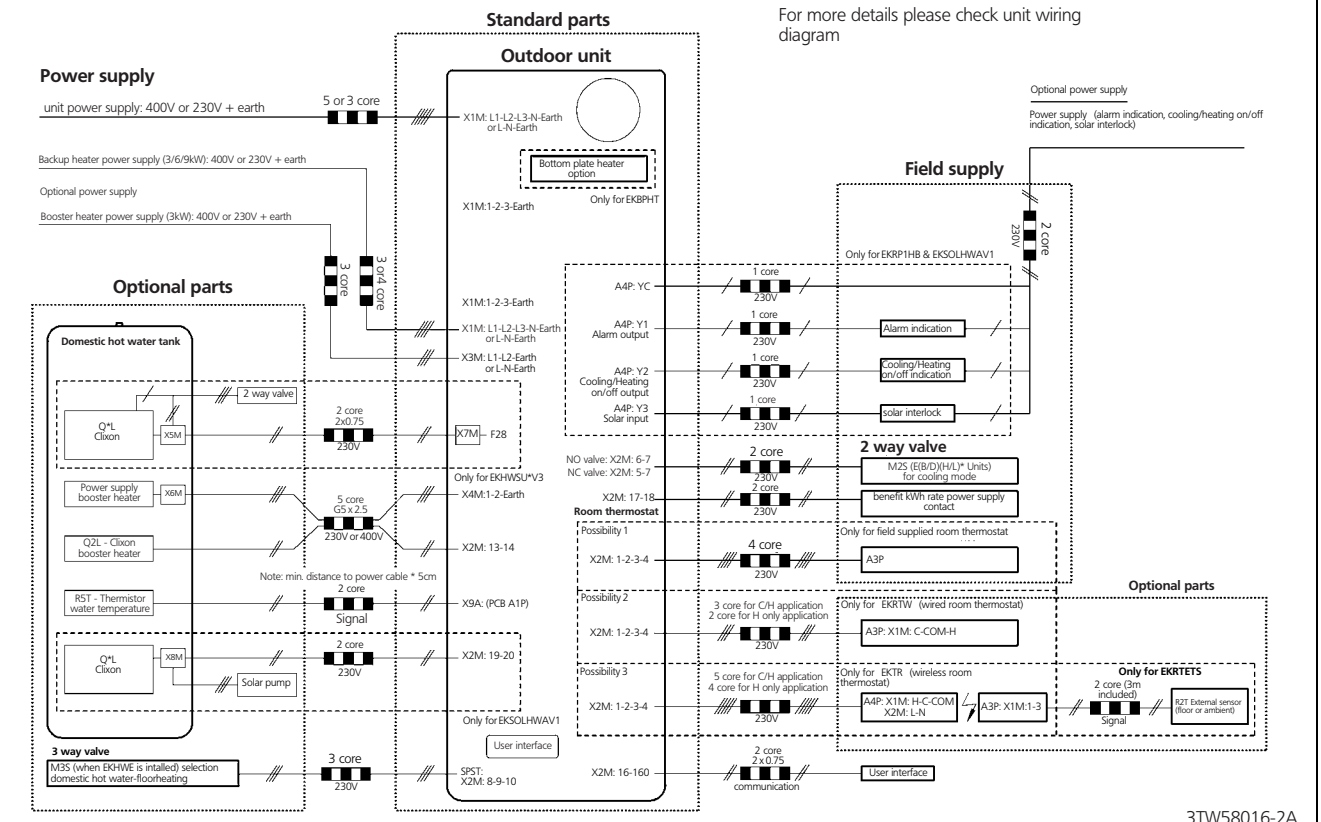
7 Wiring diagram

7 - 2 External connection diagram

EBLQ011-016AA6V3 Electrical connection diagram Altherma

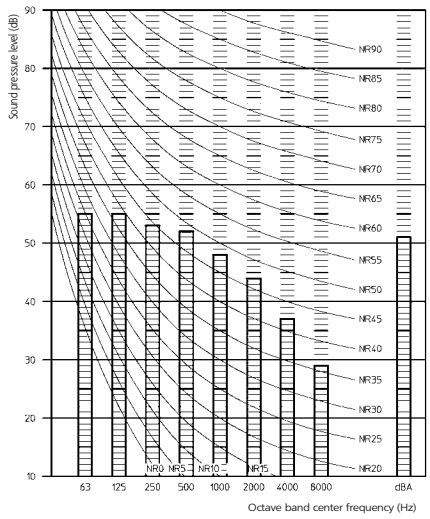


8 Sound data

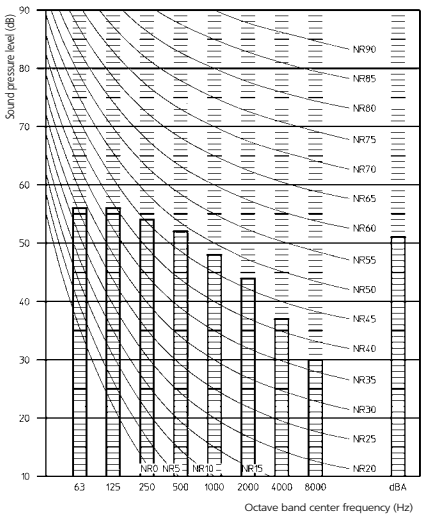
8 - 1 Sound pressure spectrum

EBLQ011-016AA6V3

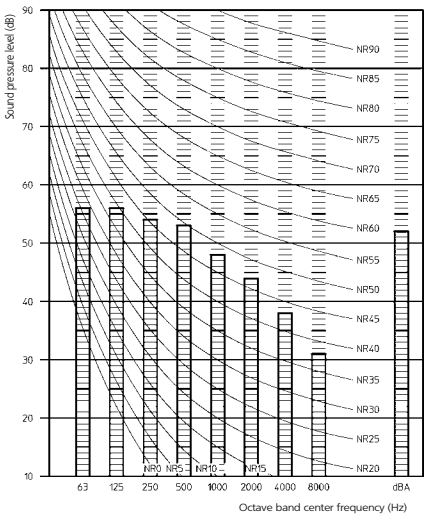
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

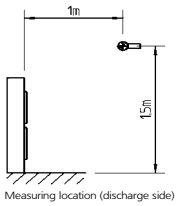


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

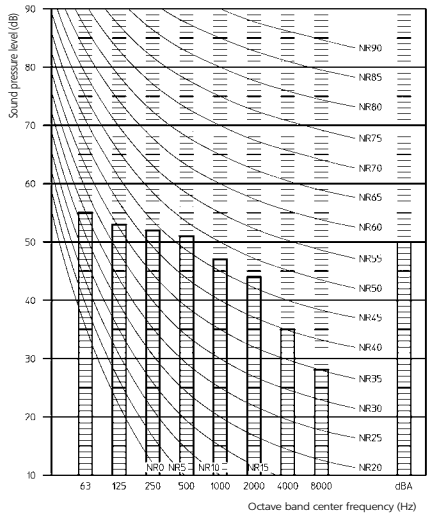


Measuring location (discharge side)

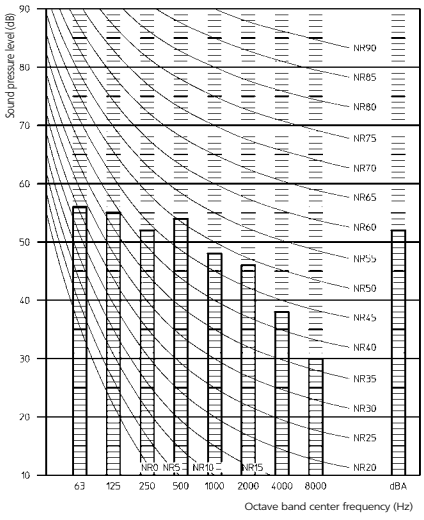
3TW58017-2

EBLQ011-016AA6V3

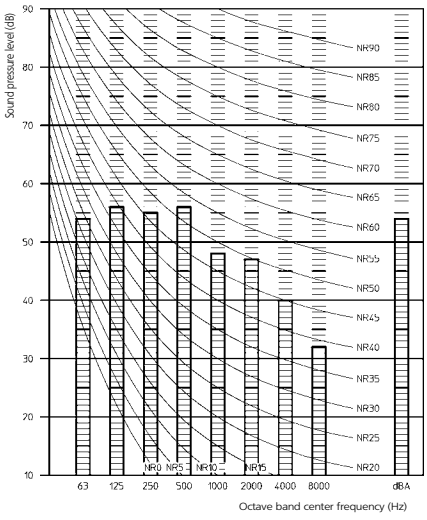
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

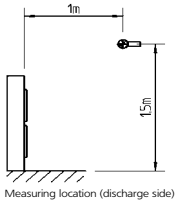


E(D/B)(H/L)Q016* COOLING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

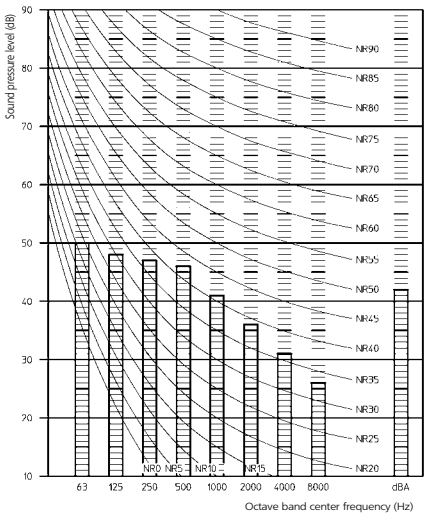
3TW58017-1

8 Sound data

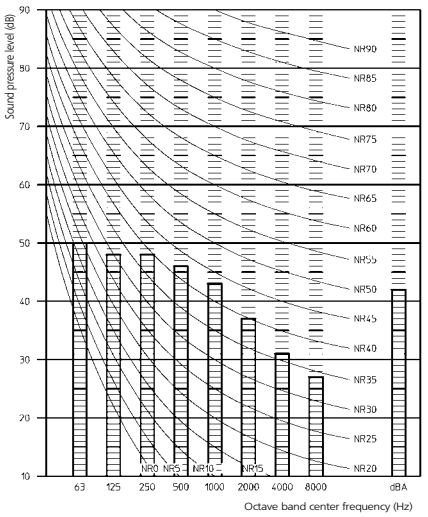
8 - 2 Sound pressure night quiet mode

EBLQ011-016AA6V3

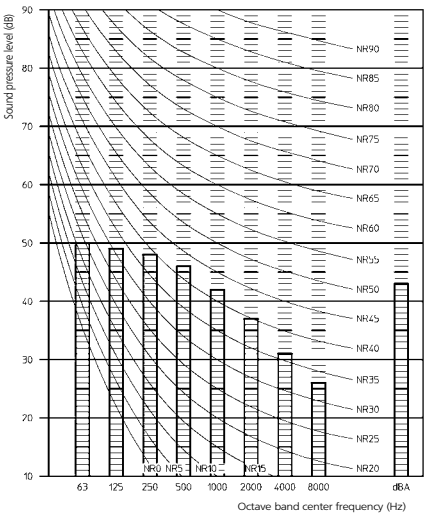
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

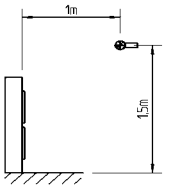


E(D/B)(H/L)Q016* HEATING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

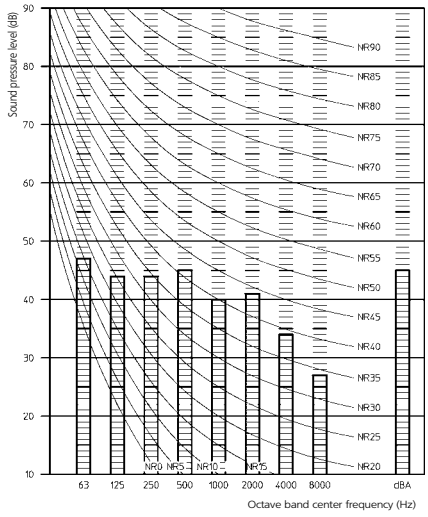


Measuring location (discharge side)

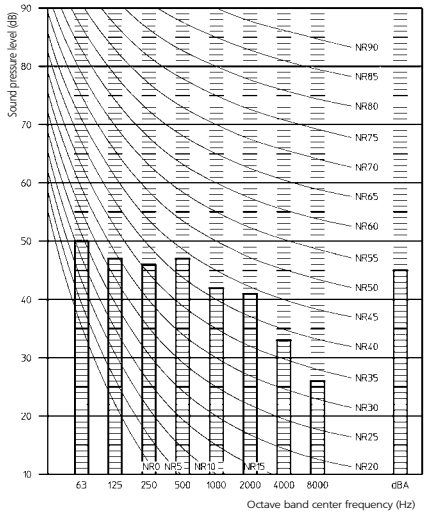
3TW58017-4

EBLQ011-016AA6V3

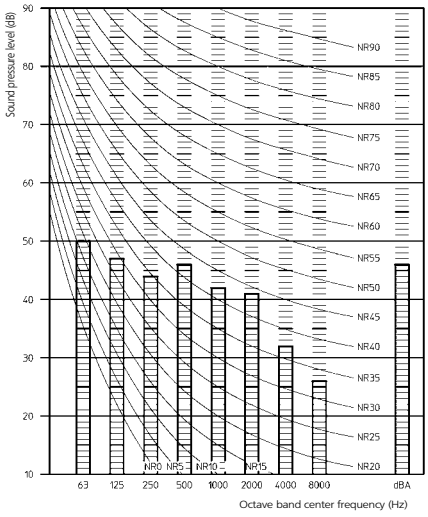
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

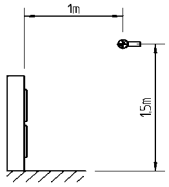


E(D/B)(H/L)Q016* COOLING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location (discharge side)

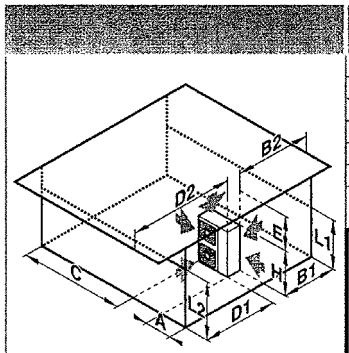
3TW58017-3

9 Installation

9 - 1 Service space

EBLQ011-016AA6V3

A. Non stacked installation



							A	B1	B2	C	D1	D2	E	L1/L2
✓								≥50(100)						
✓		✓	✓				≥100	≥100		≥100				
✓				✓				≥100				≤500	≥1000	
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000	
	✓										≥500			
	✓			✓					≤500		≥500		≥1000	
✓	✓				L1<L2			≥50(100)			≥500			
					L2<L1			≥50(100)			≥500			
✓	✓			✓	L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H
											≥1000			0<L1≤1/2H
						H<L1		L1≤H						1
					L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H
								≥100(200)						1/2H<L2≤H
						H<L2		L2≤H						
✓		✓	✓				≥200	≥200(300)		≥1000				
✓		✓	✓	✓			≥200	≥200(300)		≥1000		≤500	≥1000	
	✓										≥1000			
	✓			✓					≤500		≥1000		≥1000	
✓	✓				L1<L2			≥200(300)			≥1000			
					L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
✓	✓			✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H
											≥1250			1/2H<L1≤H
						H<L1		L1≤H						1
					L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
						H<L2		L2≤H						2

Legend Unit: mm

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

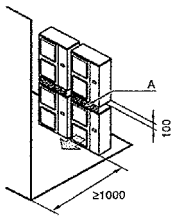
2 In these cases, only 2 units can be installed.

This situation is not allowed.

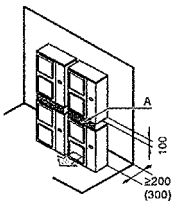
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



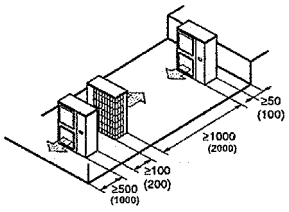
2. Obstacles exist in front of the air inlet



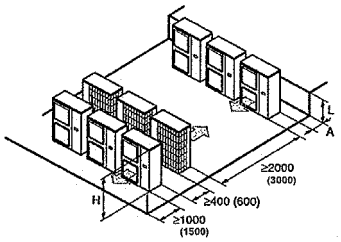
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



Relation of dimensions of H, A, and L are shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

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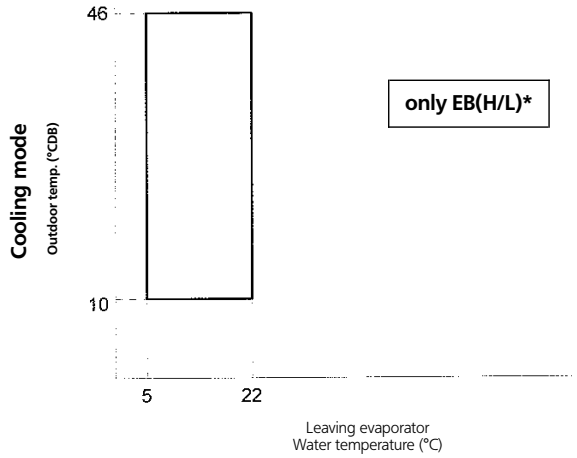
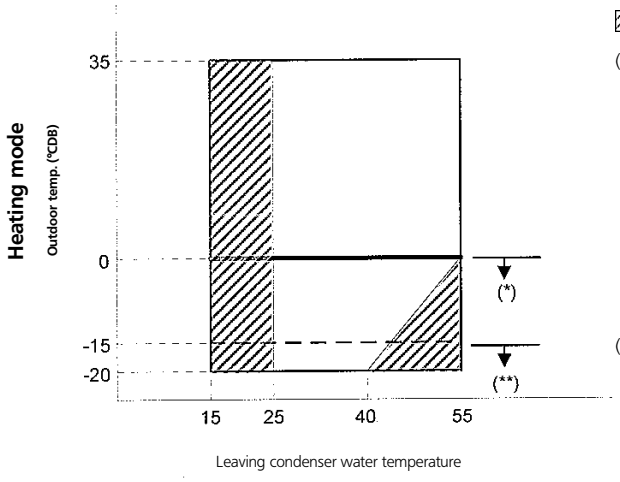
10 Operation range

EBLQ011-016AA6V3



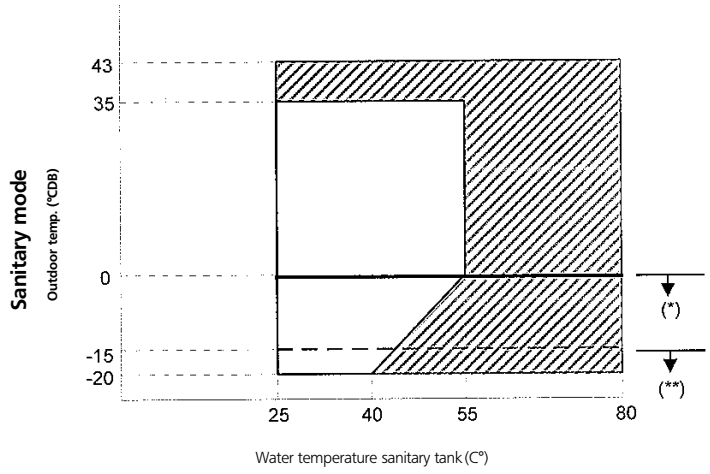


No heat pump operation, back up heater only

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

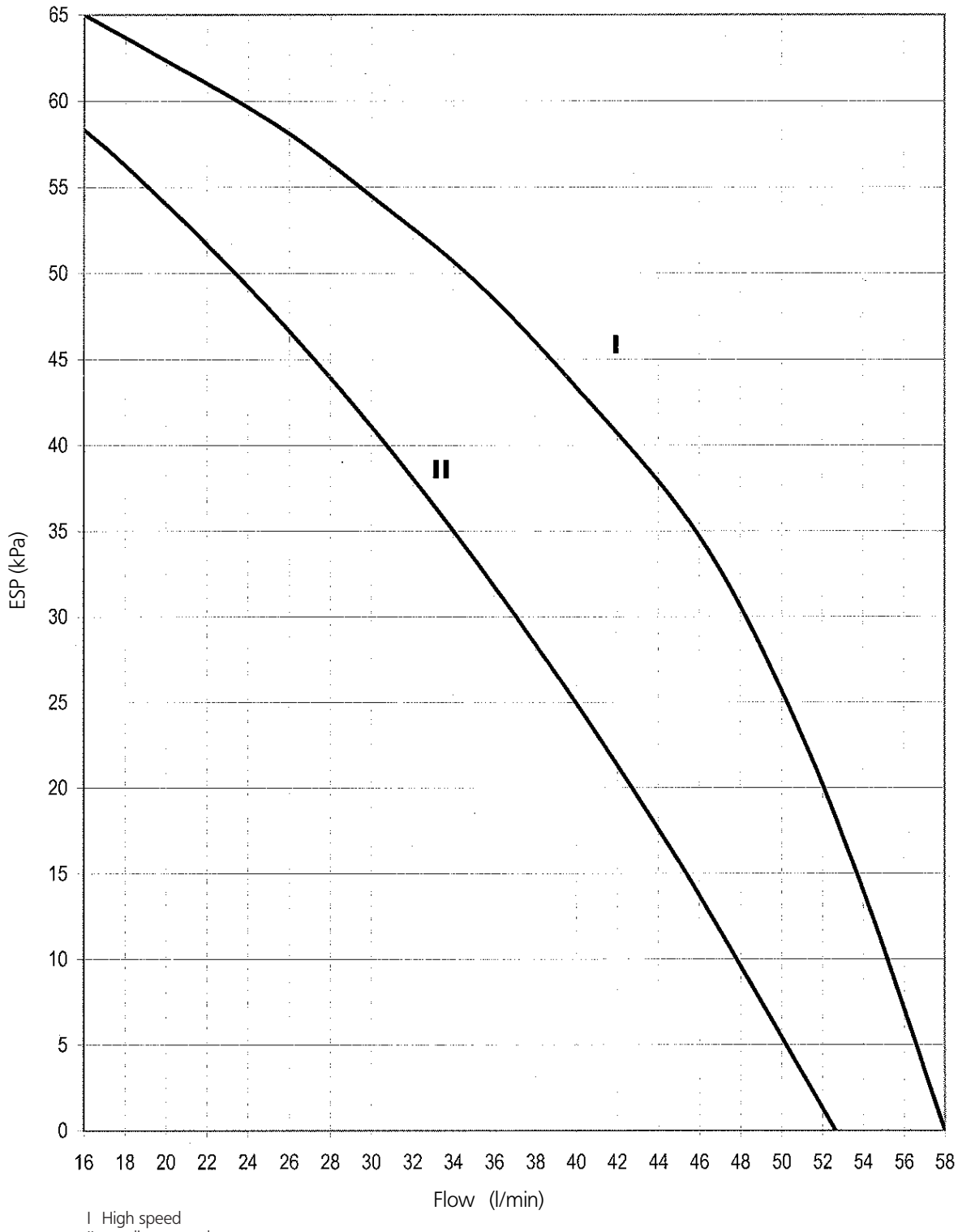
(**) only E(D/B)L*

4TW58013-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EBLQ011-016AA6V3



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

TABLE OF CONTENTS

EBLQ011-016AA6W1

1 Features

- Reversible monobloc with bottom plate heater
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 NOMINAL CAPACITY AND NOMINAL INPUT				EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Condition 1	Heating capacity	Nominal	kW	11.20	14.00	16.00
	Cooling capacity	Nominal	kW	12.85	15.99	16.73
	Heating PI	Nominal	kW	2.51	3.22	3.72
	Cooling PI	Nominal	kW	3.78	5.32	6.06
	COP	Nominal		4.46	4.35	4.30
	EER	Nominal		3.39	3.01	2.76
Condition 2	Heating capacity	Nominal	kW	10.87	13.10	15.06
	Cooling capacity	Nominal	kW	10.00	12.50	13.10
	Heating PI	Nominal	kW	3.12	3.98	4.58
	Cooling PI	Nominal	kW	3.60	4.98	5.65
	COP	Nominal		3.48	3.29	3.29
	EER	Nominal		2.78	2.51	2.32
Notes				Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C)		
				Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C)		

2-2 TECHNICAL SPECIFICATIONS				EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Casing	Colour			Ivory white		
	Material			Painted galvanised steel		
Dimensions	Unit	Height	mm	1,418		
		Width	mm	1,435		
		Depth	mm	382	382	382
	Packing	Height	mm	1,557		
		Width	mm	1,500		
		Depth	mm	430	430	430
Weight	Unit		kg	180	180	180
	Packed unit		kg	200	200	200
Packing	Material			Wood		
				Carton		
				Plastic foil		
	Weight		kg	20	20	20
Operation Range	Heating - Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	35	35	35
	Heating - Waterside	Min	°C	15	15	15
		Max	°C	55	55	55
	Cooling - Ambient	Min	°CDB	10	10	10
		Max	°CDB	46	46	46
	Cooling - Waterside	Min	°C	5	5	5
		Max	°C	22	22	22
	Domestic hot water -Ambient	Min	°CDB	-15	-15	-15
		Max	°CDB	43	43	43
	Domestic hot water - Waterside	Min	°C	25	25	25
		Max	°C	80	80	80
Sound Level (nominal)	Heating	Sound Power	dBA	64	64	66
		Sound Pressure	dBA	49	51	53
	Cooling	Sound Power	dBA	65	66	69
		Sound Pressure	dBA	50	52	54
Sound Level (Night quiet)	Heating	Sound Pressure	dBA	42	42	43
	Cooling	Sound Pressure	dBA	45	45	46
Refrigerant	Type			R-410A		
	Charge		kg	2.95	2.95	2.95
	Control			Electronic expansion valve		
	Nr of Circuits			1	1	1

2 Specifications

2-2 TECHNICAL SPECIFICATIONS			EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Refrigerant Oil	Type		Daphne FVC68D		
	Charged Volume	l	1.0	1.0	1.0
Defrost Method			Pressure equalising		
Defrost Control			Sensor for outdoor heat exchanger temperature		
Capacity Control Method			Inverter controlled		
Safety Devices			High pressure switch		
			Fan motor thermal protector		
			Fuse		
Notes			The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.		
			Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		
			Conditions: Ta 35°C - LWE 7°C (DT = 5°C)		
			15°-25°C: BUH only, no heat pump operation = during commisioning		
			including piping + PHE + back-up heater / excluding expansion vessel		
			E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee		

2-3 MAIN COMPONENTS				EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Air heat exchanger	Specifications	Length	mm	857	857	857
		Nr of Rows		2	2	2
		Fin pitch	mm	1.4	1.4	1.4
		Nr of Passes		5	5	5
		Face area	m²	1.131	1.131	1.131
		Nr of Stages		60	60	60
	Tube type			Hi-XSS		
	Fin	Type		WF fin		
		Treatment		Anti-corrosion treatment (PE)		
Fan	Type			Propeller		
	Quantity			2	2	2
	Discharge direction			Horizontal		
	Motor	Quantity		2	2	2
		Model		Brushless DC		
Motor	Speed (nominal)	Steps		8	8	8
		Heating	rpm	760	760	760
		Cooling	rpm	780	780	780
Fan	Motor	Output	W	70	70	70
		Drive		Direct drive		
Compressor	Quantity			1	1	1
	Motor	Model		JT1G-VDYR@S		
		Type		Hermetically sealed scroll compressor		
		Motor Output	W	2,200		
		Starting Method		Inverter driven		
Motor	Crankcase Heater	Output	W	33	33	33
Pump	Type			Water cooled		
	Nr. of speed			2	2	2
	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
		Cooling	kPa	55.9	49.1	46.8
	Power input		W	210	210	210
Water side Heat exchanger	Type			Brazed plate		
	Quantity			1	1	1
	Water volume		l	1.01	1.01	1.01
	Water flow rate Min.		l/min	16	16	16
	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
		Cooling	l/min	36.8	45.9	48.0
	Water flow rate Max.		l/min	58	58	58
	Insulation material			Foamed synthetic elastomer		

2 Specifications

2-3 MAIN COMPONENTS			EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Expansion vessel	Volume	l	10	10	10
	Maximum water pressure	bar	3	3	3
	Pre pressure	bar	1.0	1.0	1.0
Water filter	Diameter perforations	mm	1	1	1
	Material		Brass		
Water circuit	Piping connections	inch	G5/4 (FEMALE)		
	Piping	inch	5/4"		
	Safety valve	bar	3	3	3
	Manometer		Yes		
	Drain valve / Fill valve		yes		
	Shut off valve		yes		
	Air purge valve		yes		
	Total water volume (6)	l	5.5	5.5	5.5

2-4 ELECTRICAL SPECIFICATIONS				EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Power supply compressor component	Main Power	Name		W1		
		Phase		3N~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Heating (A)	A	5.8	5.8	5.8
	Maximum running current	Heating	A	14	14	14
		Cooling	A	13.5	13.5	13.5
Power supply compressor component	Current	Recomended fuses	A	20	20	20
	Wiring connections	For power supply compressor component		See installation manual		
Power supply hydraulic component	Current back-up heater	Type		6W1		
Current back-up heater	Power Supply	Phase		3~		
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Running Current	Back-up heater	A	8.7	8.7	8.7
Running Current	Back-up heater + booster heater	+EK*V3	A	21.7(8.7+13)		
		+EK*Z2	A	16.2(8.7+7.5)		
Current back-up heater	Minimum Ssc value	+EK*V3	kVa	Equipment complying with EN/IEC 61000-3-12(**)		
		+EK*Z2	kVa	Equipment complying with EN/IEC 61000-3-12(**)		

2 Specifications

2-4 ELECTRICAL SPECIFICATIONS				EBLQ011AA6W1	EBLQ014AA6W1	EBLQ016AA6W1
Power supply hydraulic component	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
	Wiring connections	Connection type		for power supply hydraulic compartment		
		Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Connection type		for power supply connection to optional sanitary tank + Q2L		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		For more details on voltage range and current refer to installation manual		
		Connection type		for connection with R5T		
		Quantity of wires		Wire included in option EKHWS*		
		Type of wires		Wire included in option EKHWS*		
		Connection type		for connection with A3P		
		Quantity of wires		Depends on thermostat type, refer to installation manual		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M2S		
		Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
		Connection type		for connection with M3S		
		Quantity of wires		3G or 4G		
		Type of wires		Select diameter and type according to national and local regulations		
		Type of wires		Voltage 230V / Maximum current: 100mA / Minimum 0.75mm²		
	Notes			Power supply compressor compartment is for compressor, fan, pump and controller		
				In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax.		
				Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual.		
				Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual.		
				(1)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 <= 75A.		
				(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase.		
				(3) System impedance		
				Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply.		
				Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)		

3 Options

EBLQ011-016AA6W1

Kit availability for E(D/B)(H/L)Q011-016AA*

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***AA6V3			EDHQ***AA6V3			EDLQ***AA6W1			EDHQ***AA6W1		
		EBLQ***AA6V3			EBHQ***AA6V3			EBLQ***AA6W1			EBHQ***AA6W1		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
EKRP1HB	Digital I/O PCB	○	○	○	○	○	○	○	○	○	○	○	○
EKBPHT16Y	Bottom plate heater	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKDK04	drain plug kit	-	-	-	○ (2)	○ (2)	○ (2)	-	-	-	○ (2)	○ (2)	○ (2)
EKHWS150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU150B3V3	Stainless domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU200B3V3	Stainless domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWSU300B3V3	Stainless domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS200B3Z2	Stainless domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWS300B3Z2	Stainless domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE150A3V3	Enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3V3	Enamel domestic hot water tank 200l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3V3	Enamel domestic hot water tank 300l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE200A3Z2	Enamel domestic hot water tank 200l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWE300A3Z2	Enamel domestic hot water tank 300l 2~400V	○	○	○	○	○	○	○	○	○	○	○	○
EKHWET150A3V3	Wallmounted enamel domestic hot water tank 150l 1~230V	○	○	○	○	○	○	○	○	○	○	○	○
EKSOLHWAV1	Solarkit (4)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTW	Wired room thermostat option kit	○	○	○	○	○	○	○	○	○	○	○	○
EKRTR	Wireless room thermostat option kit (incl. receiver)	○	○	○	○	○	○	○	○	○	○	○	○
EKRTETS	External temperature sensor option kit (3)	○	○	○	○	○	○	○	○	○	○	○	○

Remark: Other combinations are not guaranteed.

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In EKSOLHWAV1, the same digital I/O PCB as for EKRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit
(3) EKRTETS can only be used in combination with EKRTR
(4) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.

Note:
E(D/B)L* units include special equipment (insulation, heater sheet, ….) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

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3 Options

EBLQ011-016AA6W1

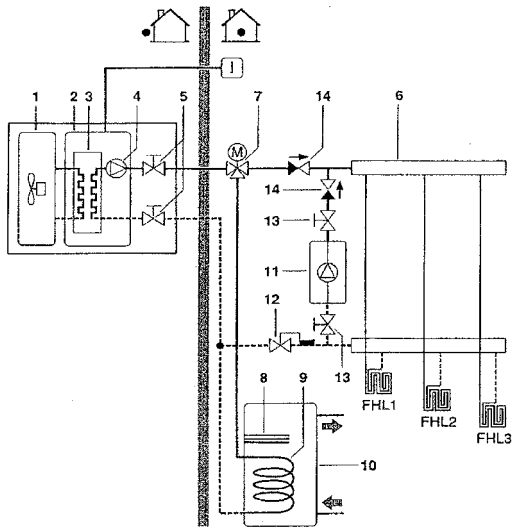
Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

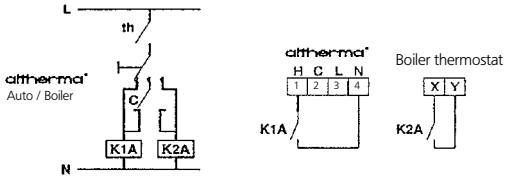
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.



1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

Field wiring



Boiler thermostat	Boiler thermostat
C	Auxiliary contact (normal closed)
th	Heating only room thermostat
K1A	Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply)
K2A	Auxiliary relay for activation of boiler (field supply)

Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact (C)

Make sure that auxiliary contact (C) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact (C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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4 Capacity tables

4 - 1 Heating capacity tables

EBLQ011-016AA6W1

Maximum Heating Capacity (Peak values)

Model	LWC [°C]	30		35		40		45		50		55	
	Tamb	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011AA6W1	-20 (a)	5,86	2,21	5,51	2,42	5,39	2,66	5,25	2,95				
	-15	6,63	2,25	6,23	2,46	6,09	2,71	5,92	3,01	5,68	3,34		
	-7	8,13	2,29	7,66	2,51	7,51	2,77	7,32	3,08	7,03	3,43	6,53	3,81
	-2	9,28	2,29	8,76	2,52	8,61	2,79	8,41	3,11	8,11	3,46	7,55	3,85
	2	10,32	2,29	9,77	2,52	9,62	2,80	9,42	3,12	9,10	3,48	8,51	3,87
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	7,42	2,79	7,20	3,04	7,00	3,33	5,49	3,68				
	-15	8,29	2,85	8,00	3,11	7,72	3,41	7,60	3,76	7,57	4,16		
	-7	10,07	2,92	9,67	3,19	9,28	3,51	9,08	3,87	8,97	4,28	8,58	4,73
	-2	11,46	2,95	11,00	3,23	10,54	3,55	10,29	3,92	10,15	4,34	9,69	4,80
	2	12,75	2,96	12,23	3,25	11,72	3,57	11,43	3,96	11,27	4,38	10,75	4,84
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	8,47	3,20	8,34	3,49	8,22	3,83	6,50	4,21				
	-15	9,44	3,28	9,21	3,57	8,99	3,92	8,91	4,31	8,69	4,75		
	-7	11,44	3,37	11,08	3,67	10,73	4,03	10,53	4,43	10,17	4,90	9,81	5,41
	-2	13,01	3,41	12,58	3,72	12,14	4,09	11,89	4,50	11,43	4,97	11,00	5,49
	2	14,48	3,43	13,98	3,75	13,48	4,12	13,18	4,54	12,65	5,01	12,15	5,54
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

Maximum Heating Capacity (integrated values)

Model	LWC	30		35		40		45		50		55	
	Tamb	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
E(D/B)(H/L)Q011AA6W1	-20 (a)	4,96	2,16	4,67	2,37	4,57	2,60	4,45	2,89				
	-15	5,61	2,20	5,27	2,41	5,16	2,66	5,01	2,95	4,81	3,27		
	-7	6,88	2,24	6,49	2,46	6,36	2,72	6,19	3,02	5,95	3,35	5,53	3,73
	-2	7,70	2,20	7,27	2,42	7,15	2,68	6,98	2,98	6,73	3,32	6,27	3,70
	2	8,57	2,19	8,11	2,42	7,99	2,69	7,82	3,00	7,56	3,34	7,06	3,72
	7	11,80	2,27	11,20	2,51	11,06	2,79	10,87	3,12	10,53	3,49	9,88	3,89
	12	12,80	2,20	12,18	2,45	12,07	2,73	11,89	3,06	11,57	3,43	10,89	3,83
	15	13,84	2,17	13,20	2,42	13,10	2,71	12,93	3,05	12,60	3,42	11,89	3,82
	20	15,73	2,11	15,04	2,37	14,97	2,67	14,82	3,01	14,07	3,39	13,32	3,80
E(D/B)(H/L)Q014AA6W1	-20 (a)	6,31	2,70	6,13	2,94	5,96	3,23	4,67	3,56				
	-15	7,05	2,76	6,80	3,01	6,57	3,30	6,46	3,64	6,44	4,02		
	-7	8,57	2,83	8,23	3,09	7,89	3,40	7,72	3,75	7,63	4,14	7,30	4,58
	-2	9,11	2,67	8,74	2,92	8,38	3,21	8,18	3,55	8,07	3,93	7,70	4,34
	2	10,13	2,68	9,72	2,94	9,31	3,24	9,09	3,58	8,96	3,96	8,55	4,38
	7	14,59	2,96	14,00	3,22	13,42	3,59	13,10	3,98	12,91	4,41	12,31	4,88
	12	15,44	2,87	14,84	3,16	14,23	3,49	13,91	3,87	13,72	4,30	13,09	4,76
	15	16,73	2,86	16,09	3,15	15,45	3,49	15,10	3,87	14,90	4,30	14,23	4,77
	20	19,09	2,82	18,38	3,13	17,67	3,47	17,30	3,86	16,60	4,30	15,87	4,77
E(D/B)(H/L)Q016AA6W1	-20 (a)	7,00	3,11	6,89	3,39	6,79	3,71	5,37	4,08				
	-15	7,80	3,18	7,61	3,46	7,43	3,80	7,37	4,18	7,18	4,61		
	-7	9,45	3,26	9,15	3,56	8,86	3,91	8,70	4,30	8,40	4,75	8,11	5,25
	-2	9,96	3,03	9,62	3,31	9,29	3,64	9,09	4,00	8,75	4,42	8,41	4,88
	2	11,08	3,05	10,69	3,34	10,31	3,67	10,08	4,04	9,68	4,46	9,29	4,93
	7	16,58	3,45	16,00	3,72	15,42	4,16	15,06	4,58	14,45	5,06	13,86	5,59
	12	17,29	3,35	16,69	3,68	16,08	4,05	15,71	4,47	15,07	4,94	14,44	5,46
	15	18,75	3,35	18,10	3,68	17,45	4,06	17,05	4,47	16,36	4,95	15,68	5,48
	20	21,42	3,33	20,70	3,67	19,98	4,05	19,53	4,48	18,74	4,96	17,98	5,49

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)

PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)

LWE : Leaving Water Evaporator temperature (°C)

LWC : Leaving Water Condensor temperature (°C)

Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

4 Capacity tables

4 - 2 Cooling capacity tables

EBLQ011-016AA6W1

Maximum Cooling Capacity

Model	Tamb	20		25		30		35		40		45	
	LWE [°C]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]	CC [kW]	PI [kW]
EB(H/L)Q011AA6W1	7	11,08	2,70	10,99	2,97	10,62	3,26	10,00	3,60	9,16	3,97	8,14	4,38
	10	11,77	2,73	11,66	3,00	11,27	3,31	10,61	3,65	9,73	4,03	8,65	4,44
	13	12,93	2,76	12,81	3,04	12,38	3,35	11,66	3,70	10,70	4,08	9,39	4,65
	15	13,74	2,78	13,61	3,06	13,15	3,38	12,39	3,73	11,37	4,12	9,73	4,54
	18	15,17	2,81	14,66	3,10	13,87	3,42	12,85	3,78	11,61	4,18	9,85	4,18
	22	16,92	2,85	16,36	3,15	15,49	3,48	14,36	3,85	13,00	4,26	10,32	3,73
EB(H/L)Q014AA6W1	7	13,87	3,78	13,75	4,12	13,29	4,52	12,50	4,98	11,08	4,78	9,81	5,27
	10	14,92	3,84	14,79	4,20	14,28	4,61	13,43	5,07	11,92	4,86	10,56	5,35
	13	16,38	3,90	16,23	4,27	15,68	4,69	14,75	5,16	13,09	4,94	10,95	5,43
	15	17,39	3,95	17,23	4,32	16,64	4,75	15,66	5,22	13,91	5,00	11,35	5,30
	18	18,92	4,02	18,28	4,40	17,29	4,83	15,99	5,32	13,99	5,09	11,49	4,89
	22	21,07	4,11	20,37	4,51	19,28	4,95	17,85	5,44	15,65	5,21	12,05	4,36
EB(H/L)Q016AA6W1	7	14,52	4,30	14,44	4,70	13,95	5,15	13,10	5,65	11,57	5,39	9,84	5,28
	10	15,65	4,39	15,53	4,80	14,99	5,26	14,07	5,76	12,43	5,49	10,59	5,37
	13	17,19	4,48	17,05	4,90	16,45	5,36	15,44	5,87	13,64	5,59	10,98	5,45
	15	18,26	4,54	18,09	4,97	17,46	5,43	16,39	5,95	14,49	5,66	11,38	5,32
	18	19,87	4,64	19,20	5,07	18,14	5,54	16,73	6,06	14,57	5,76	11,52	4,91
	22	22,14	4,77	21,39	5,21	20,21	5,70	18,66	6,22	16,28	5,91	12,08	4,38

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SYMBOLS

CC : Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
HC : Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW)
PI : Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW)
LWE : Leaving Water Evaporator temperature (°C)
LWC : Leaving Water Condensor temperature (°C)
Tamb : Ambient temperature (°C) RH=85%

(a) : only E(D/B)L*

NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

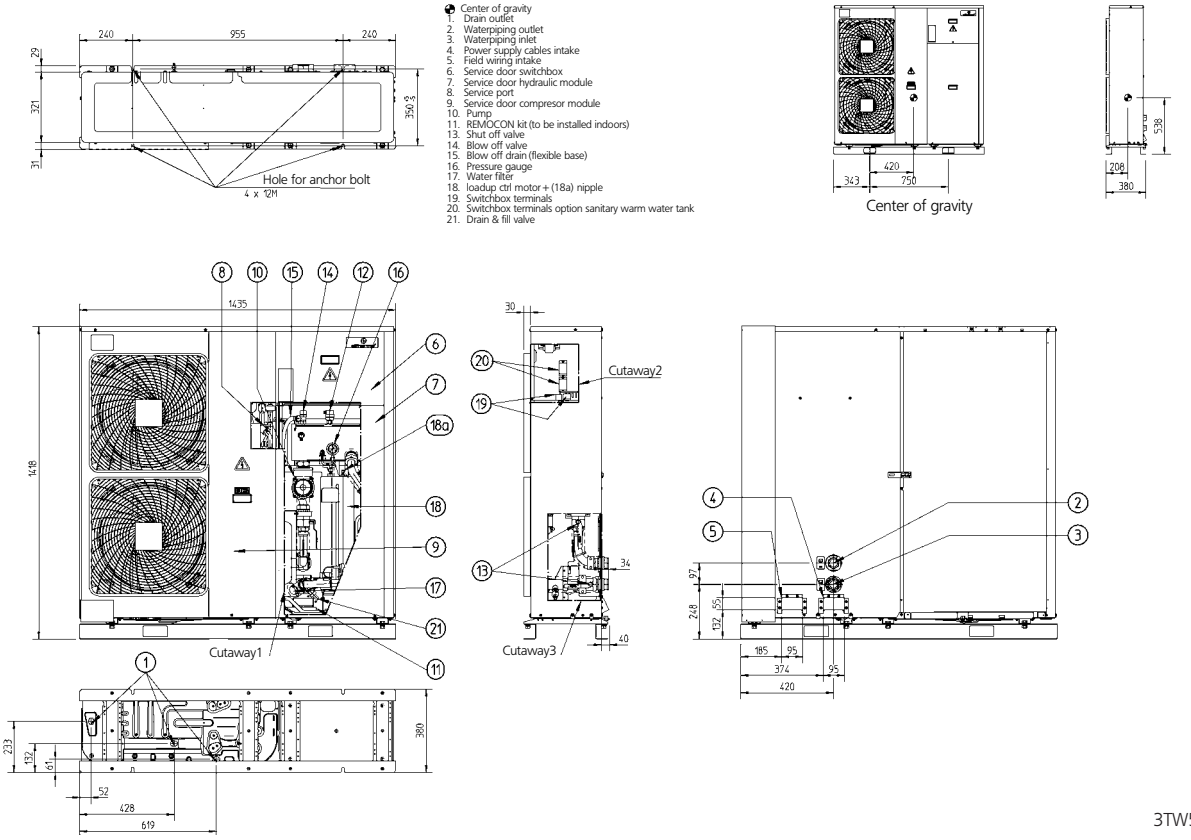
2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For E(D/B)LQ* models only:if Tamb < 4°C: bottom plate heater power input to be added = 95W

5 Dimensional drawing & centre of gravity

5 - 1 Dimensional drawing

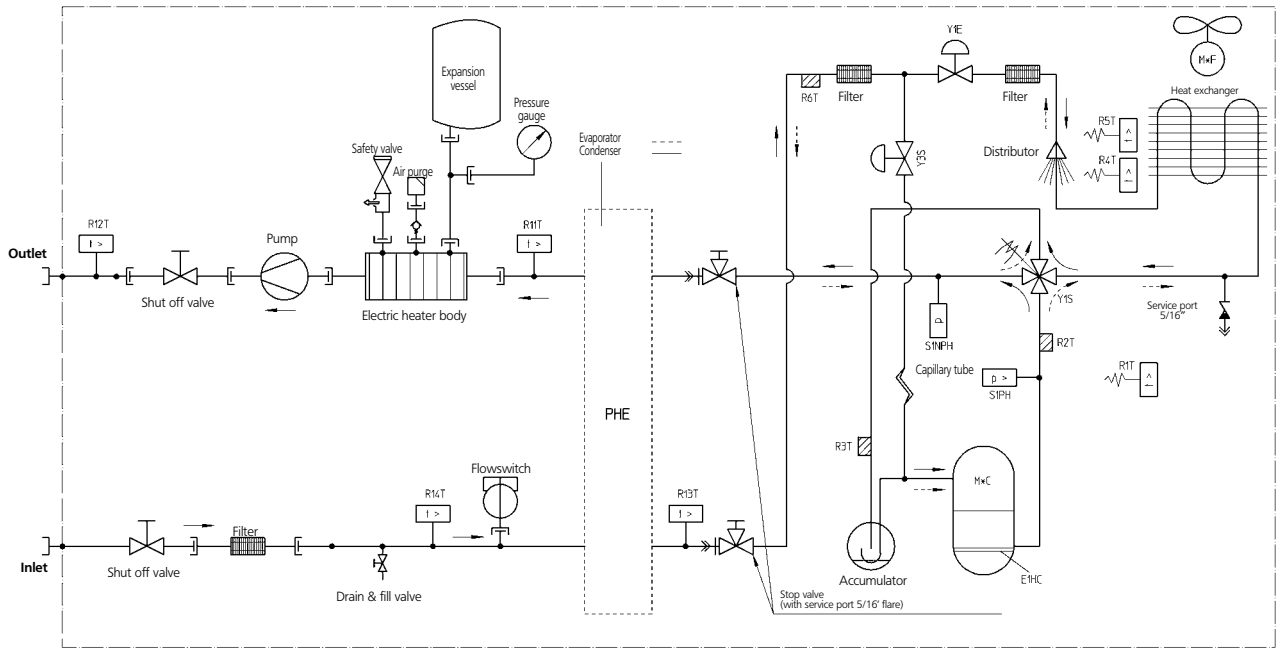
EBLQ011-016AA6W1



6 Piping diagram

6 - 1 Piping diagram

EBLQ011-016AA6W1



R1T	: Thermistor (Air)	Y1S	: 4-way valve
R2T	: Thermistor (discharge)	Y3S	: Injection valve
R3T	: Thermistor (Suction)	S1PH	: High pressure switch
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor
R5T	: Thermistor (middle)	M*C	: Compressor
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor
E1HC	: Crankcase heater	R14T	: Inlet water thermistor

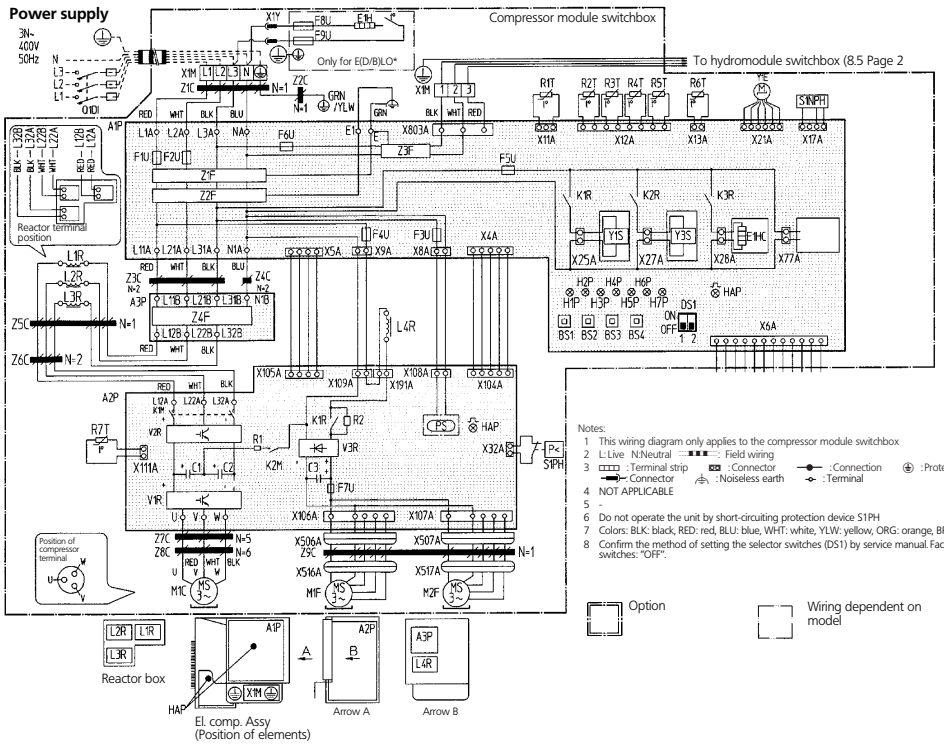
Heating
Cooling

3TW58135-1A

7 Wiring diagram

7 - 1 Wiring diagram

EBLQ011-016AA6W1



Notes:
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N:Neutral Field wiring
3 :Terminal strip :Connector :Connection :Protective earth (screw)
Connector :Noiseless earth :Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors: BLK: black, RED: red, BLU: blue, WHT: white, YLW: yellow, ORG: orange, BRN: brown, GRN: green
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".

A1P	Printed circuit board (Main)
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1–BS4	Push button switch
C1–C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (T 31,5A/250V)
F2U	Fuse (T 31,5A/250V)
F3U	Fuse (T 6,3A/250V)
F4U	Fuse (T 6,3A/250V)
F5U	Fuse (T 6,3A/250V)
F6U	Fuse (T 6,3A/250V)
F7U	Fuse (T 5,0A/250V)
F8U, F9U	Fuse (T 1,0A/250V)
H1P–7P (A1P)	Pilotlamp (service monitor - orange)
HAP (A1P)	Pilotlamp (service monitor - green)
HAP (A2P)	Pilotlamp (service monitor - green)
K1M–K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R–L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
Q1DI	Earth leakage protector
R1–R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (High)
V1R, V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C–Z9C	Noise filter
Z1F–Z4F	Noise filter
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

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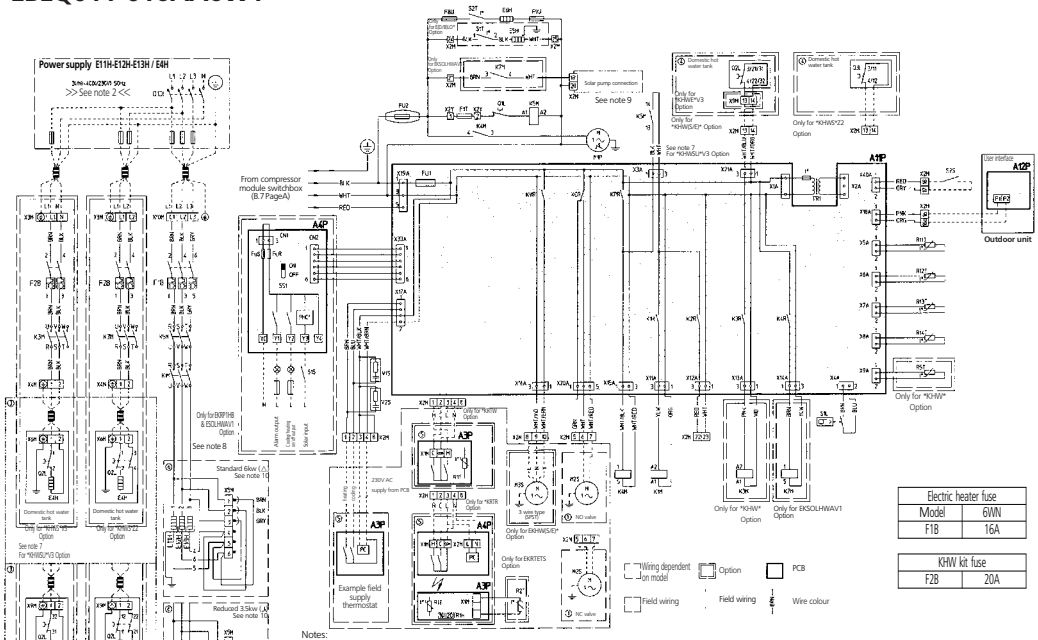

Electric heater fuse	
Model	6WN
F1B	16A

KHW kit fuse	
F2B	20A

Notes:
1 This wiring diagram only applies to the compressor module
2 Use one and same dedicated power supply compressor module switchbox, hydromodule switchbox and *KHW* option
3 Field wiring No/Nc normal open/normal closed SPST - single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow
BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 Option PCB works with an external 230V AC power supply unit. (N,L)
9 For EKSOLHWAV1, refer to option manual
10 Backupheater kW reduction, refer to installation manual

A11P	: Main PCB
A12P	: User interface PCB
A3P (*KRTW)	: Thermostat (PC=power circuit)
A4P(*KRTR)	: Solar/remote alarm PCB
A4P(EKRTR)	: Receiver PCB
E11H-E12H-E13H	: Backup heater element 1-2-3 (6 kW)
E4H	: Booster heater (3kW)
E5H	: Switchbox heater
E6H	: Expansion vessel heater
F1B	: Fuse backup heater
F1T	: Thermal fuse backup heater
F2B	: Fuse booster heater
F8U, F9U	: Fuse 1,0A F 250V
FU1	: Fuse 3,15A T 250V for PCB
FU2	: Fuse 5A T 250V
FuS, FuR	: Fuse 5A 250V for solar/remote alarm PCB
K1M	: Contactor backup heater step
K3M	: Contactor booster heater
K4M	: pump relay
K5M	: Contactor for backup heater all-pole disconnection
K7M	: Relay for solar pump
M1P	: Pump
M2S	: 2 way valve for cooling mode
M3S	: 3 way valve: floorheating/domestic hot water
PHC1	: Optocoupler input circuit
Q1DI	: Earth leakage protector
Q1L	: Thermal protector backup heater
Q2L/Q3L	: Thermal protector 1/2Booster heater
R1H (*KRTR))	: Humidity sensor
R1T (*KRTW/R)	: Ambient sensor
R2T (EKRTETS)	: External sensor (floor or ambient)
R11T	: Outlet water heat-exchanger thermistor
R12T	: Outlet water backup heater thermistor
R13T	: Refrigerant liquid side thermistor
R14T	: Inlet water thermistor
R5T(*KHW*)	: Domestic hot water thermistor
S1L	: Flowswitch
S1S	: Solar pumpstation relay
S2S	: benefit kWh rate power supply contact
SS1	: DIP switch
S1T	: thermostat switchbox heater
S2T	: thermostat expansion vessel heater
TR1	: Transformer 24V for PCB
V1S, V2S	: Spark suppression 1, 2
X1M-X10M	: Terminal strips
X2Y	: Connector

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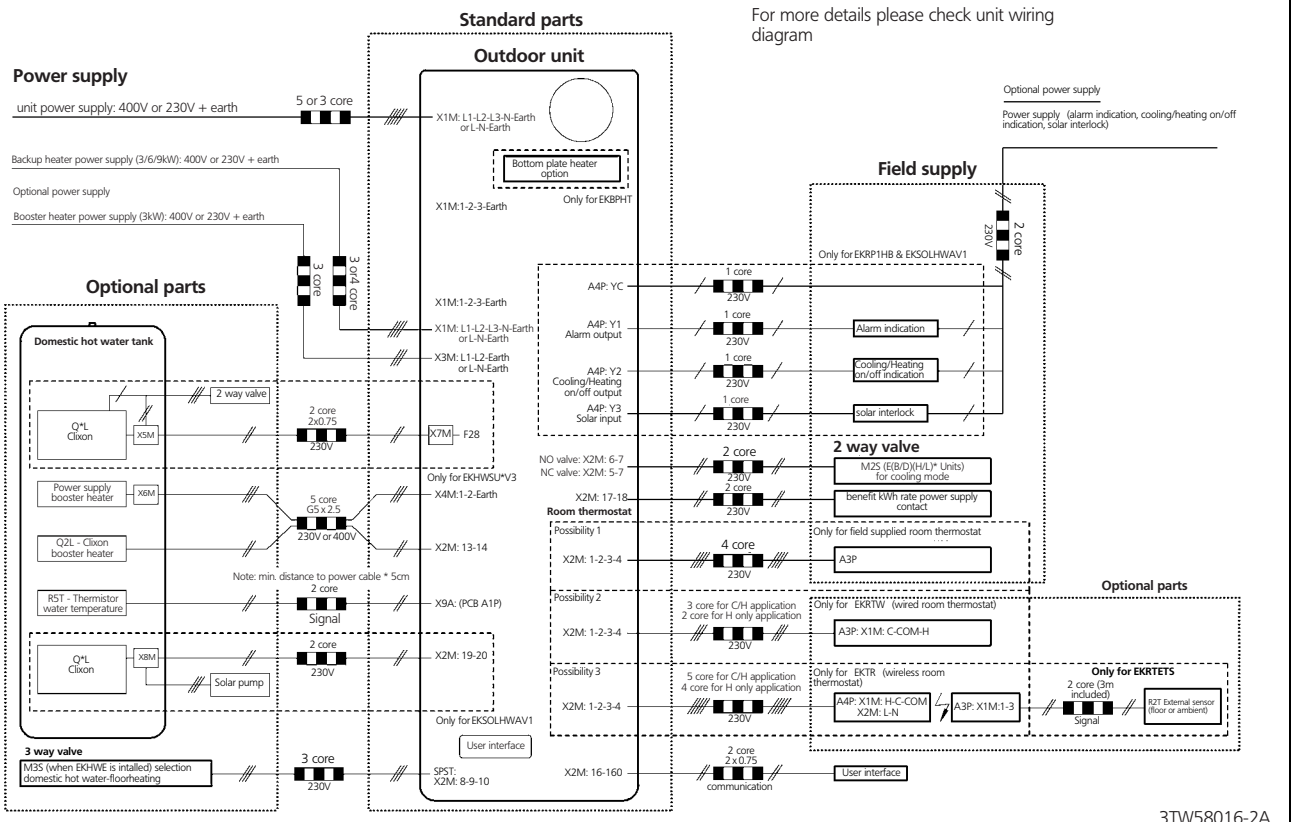
7 Wiring diagram

7 - 2 External connection diagram

EBLQ011-016AA6W1 Electrical connection diagram Altherma

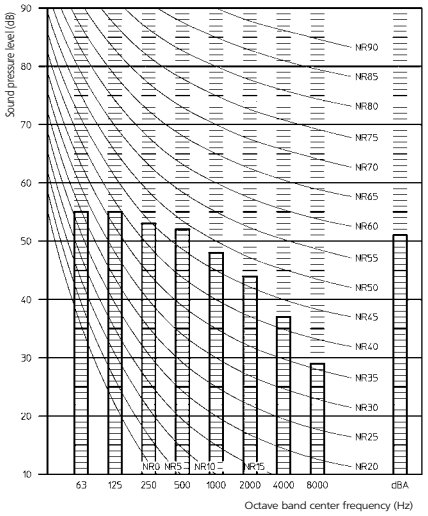


8 Sound data

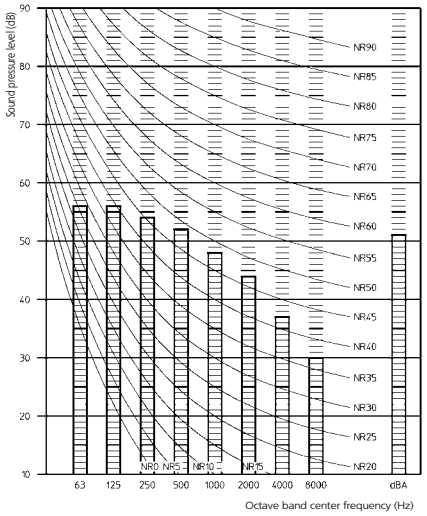
8 - 1 Sound pressure spectrum

EBLQ011-016AA6W1

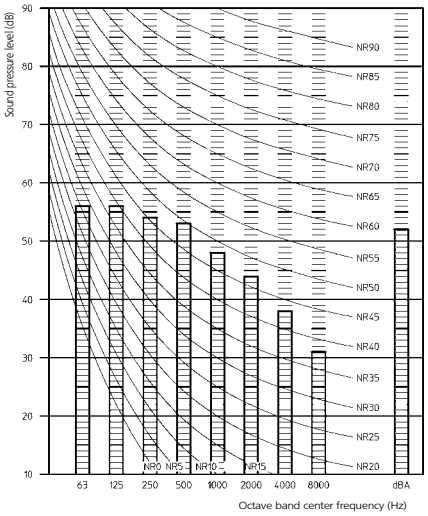
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING

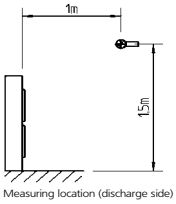


E(D/B)(H/L)Q016* HEATING



Notes:

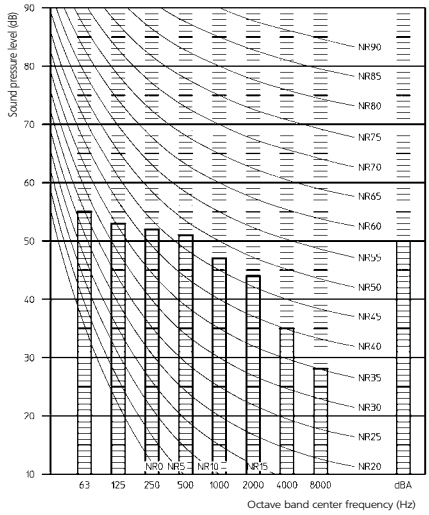
1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



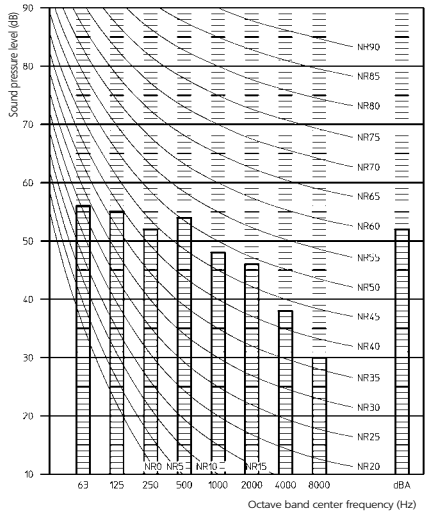
3TW58017-2

EBLQ011-016AA6W1

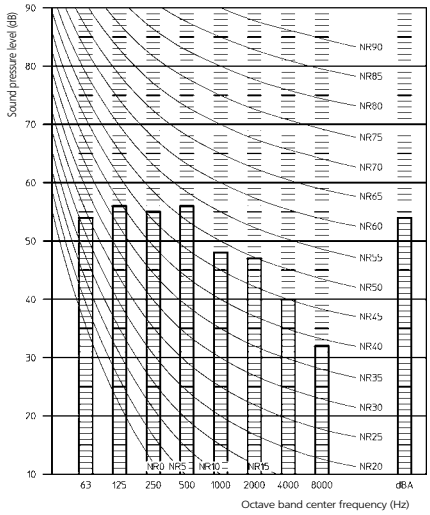
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING

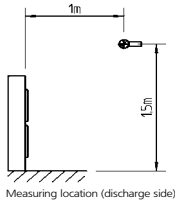


E(D/B)(H/L)Q016* COOLING



Notes:

1 Data is valid at free field condition (measured in a semi-anachoic room)
2 dBA = A-weighted sound power level (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20µPa
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



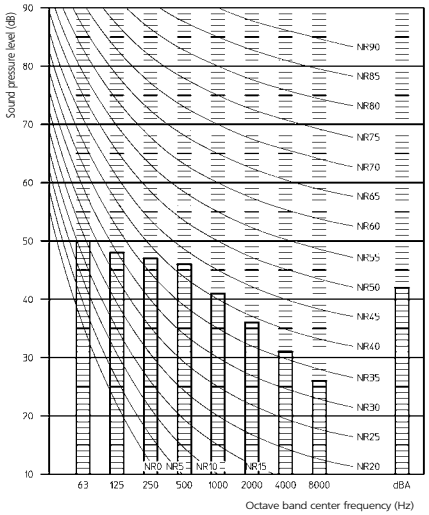
3TW58017-1

8 Sound data

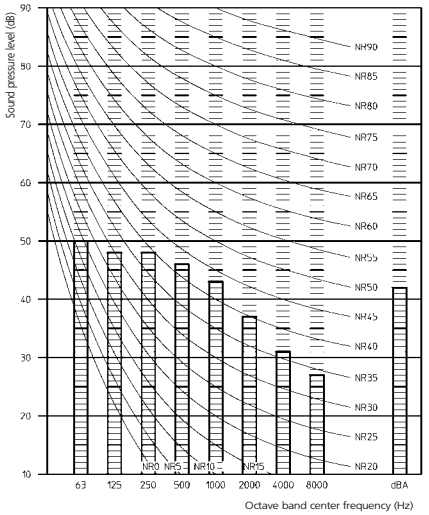
8 - 2 Sound pressure night quiet mode

EBLQ011-016AA6W1

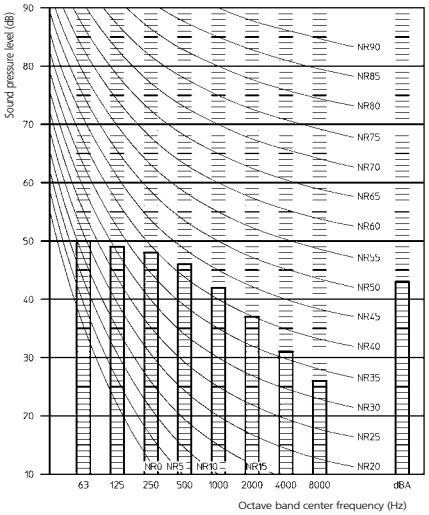
E(D/B)(H/L)Q011* HEATING



E(D/B)(H/L)Q014* HEATING



E(D/B)(H/L)Q016* HEATING



Notes:

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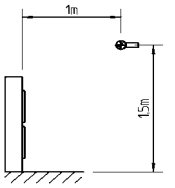
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

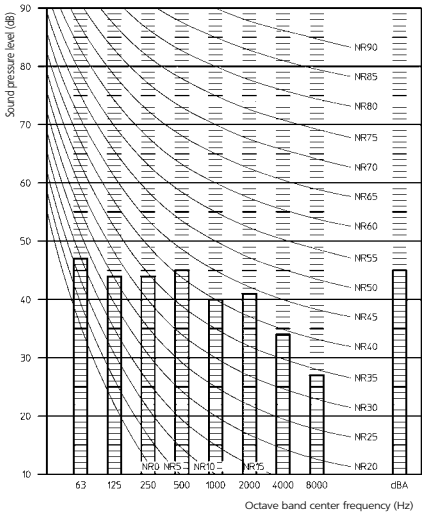


Measuring location (discharge side)

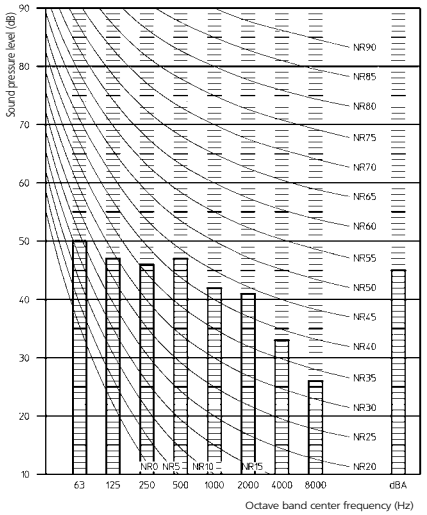
3TW58017-4

EBLQ011-016AA6W1

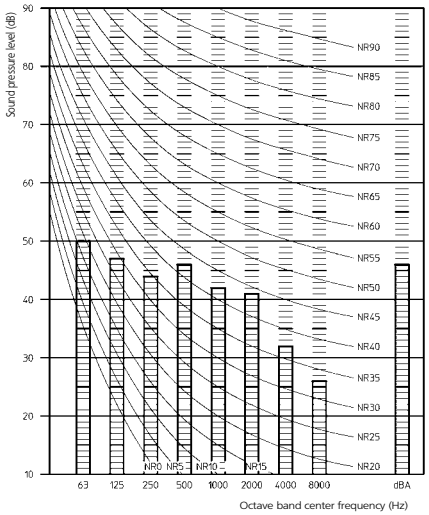
E(D/B)(H/L)Q011* COOLING



E(D/B)(H/L)Q014* COOLING



E(D/B)(H/L)Q016* COOLING



Notes:

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2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
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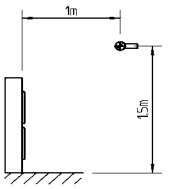


Measuring location (discharge side)

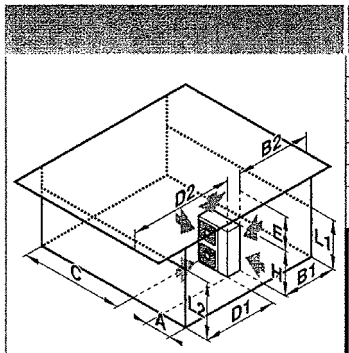
3TW58017-3

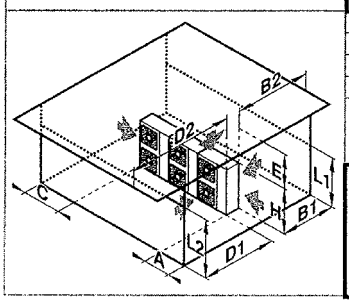
9 Installation

9 - 1 Service space

EBLQ011-016AA6W1

A. Non stacked installation





							A	B1	B2	C	D1	D2	E	L1/L2
✓								≥50(100)						
✓		✓	✓				≥100	≥100		≥100				
✓				✓				≥100				≤500	≥1000	
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000	
	✓										≥500			
	✓			✓					≤500		≥500		≥1000	
✓	✓				L1<L2			≥50(100)			≥500			
					L2<L1			≥50(100)			≥500			
✓	✓			✓	L1<L2	L1≤H		≥150(250)	≤500		≥750		≥1000	0<L1≤1/2H
											≥1000			0<L1≤1/2H
						H<L1		L1≤H						
					L2<L1	L2≤H		≥50(100)			≥500 (1000)	≥500	≥1000	0<L2≤1/2H
								≥100(200)						1/2H<L2≤H
						H<L2		L2≤H						1
✓		✓	✓				≥200	≥200(300)		≥1000				
✓		✓	✓	✓			≥200	≥200(300)		≥1000		≤500	≥1000	
	✓										≥1000			
	✓			✓					≤500		≥1000		≥1000	
✓	✓				L1<L2			≥200(300)			≥1000			
					L2<L1			≥150(250)			≥1000 (1500)			0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
✓	✓			✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000		≥1000	0<L1≤1/2H
											≥1250			1/2H<L1≤H
						H<L1		L1≤H						1
					L2<L1	L2≤H		≥150(250)			≥1000 (1500)	≤500	≥1000	0<L2≤1/2H
								≥200(300)						1/2H<L2≤H
						H<L2		L2≤H						2

Legend Unit: mm

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

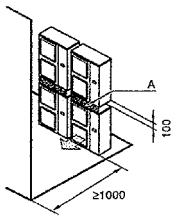
2 In these cases, only 2 units can be installed.

This situation is not allowed.

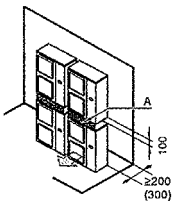
Figures between ( ) indicate the dimensions only for the 100-125-140 class models.

B. Stacked installation

1. Obstacles exist in front of the outlet side



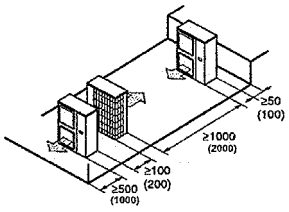
2. Obstacles exist in front of the air inlet



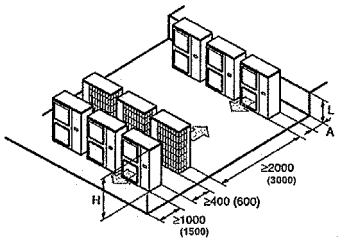
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



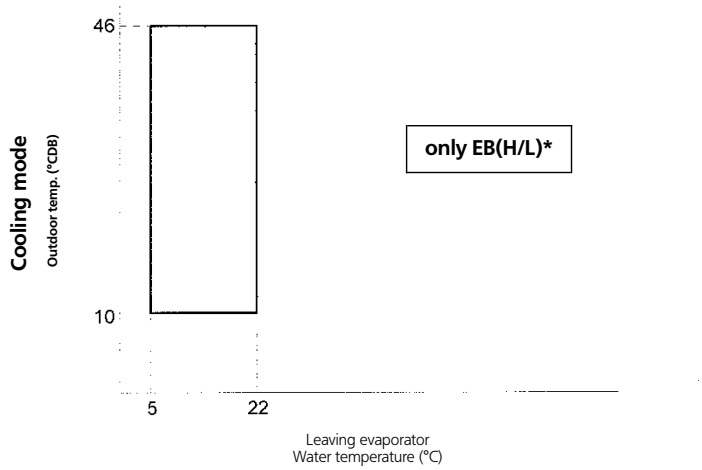
Relation of dimensions of H, A, and L are shown in the table below.

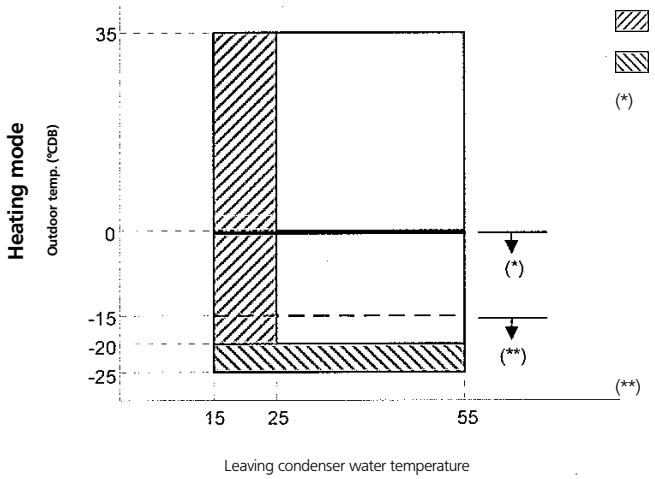
	L	A
L ≤ H	0 < L ≤ 1/2 H	150 (250)
	1/2 H < L	200 (300)
H < L	Installation impossible	

3TW26739-4

10 Operation range

EBLQ011-016AA6W1





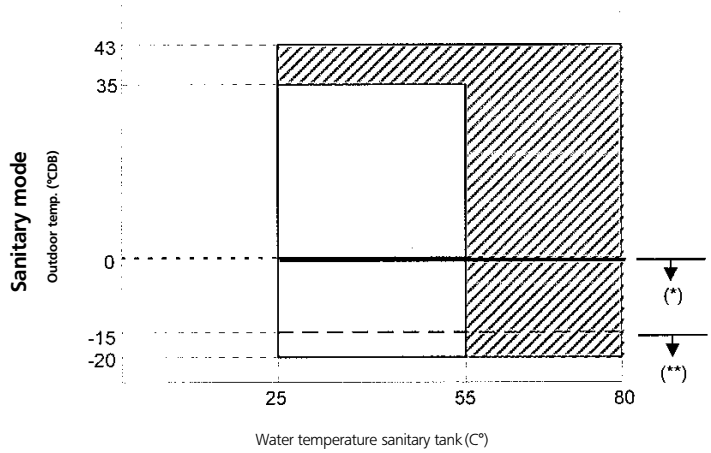
No heat pump operation, back up heater only

operation possible, but no guarantee of capacity

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*



Booster heater operation only

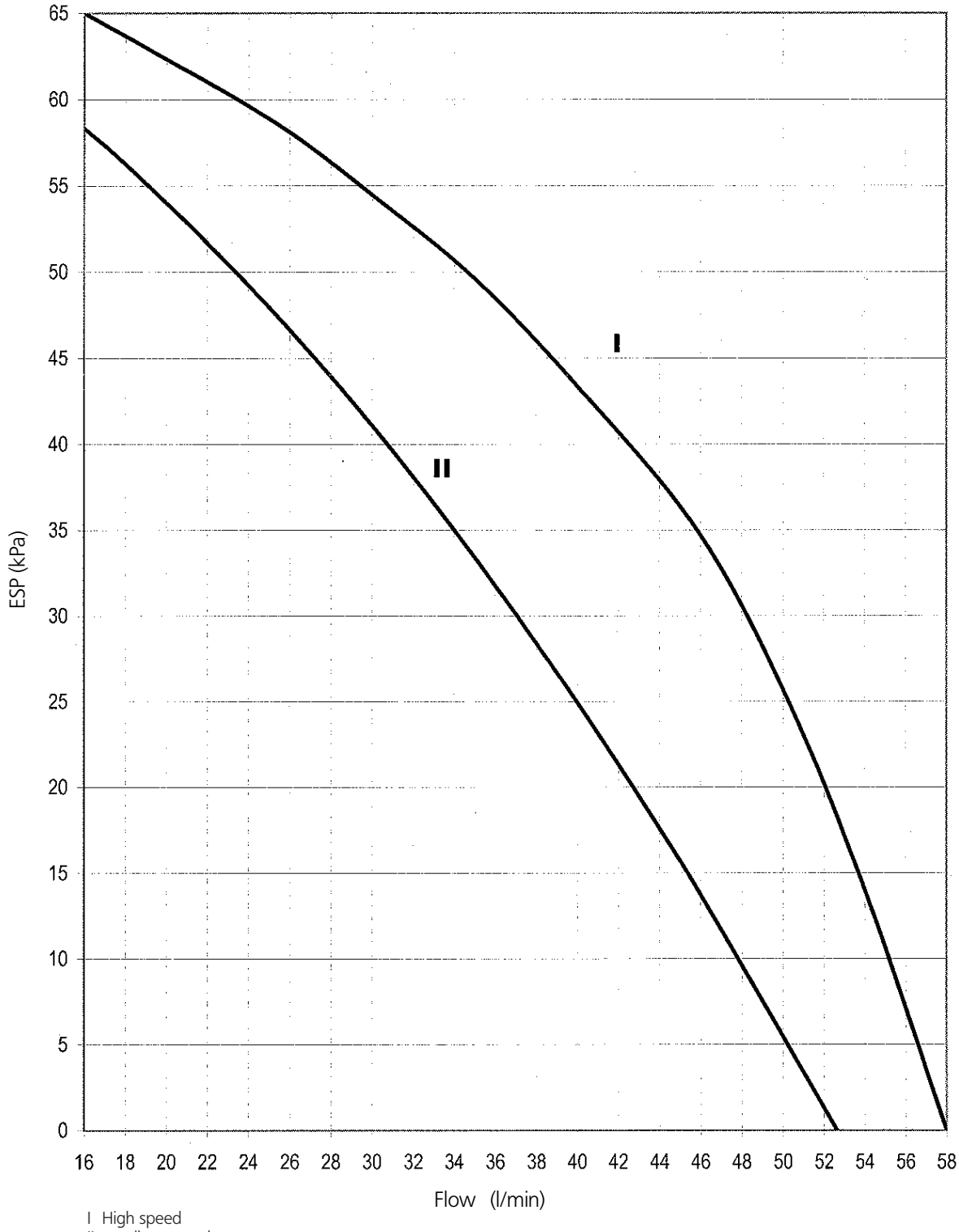
(**) only E(D/B)L*

4TW58133-1A

11 Hydraulic performance

11 - 1 Static pressure drop unit

EBLQ011-016AA6W1



I High speed
II medium speed
ESP: External static pressure
Flow: waterflow through the unit

WARNING
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

4TW58019-2

DAIKIN

EEDEN09-720

technical data

Altherma™

R-410A

Part 4/4:

EKHWS-B
EKHWE
EKSOLHWAV1
EKRTW
EKRTR

altherma™

TABLE OF CONTENTS

EKHWS-B

1 Features

- Stainless steel domestic hot water tank
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHWS150B 3V3	EKHWS200B 3V3	EKHWS300B 3V3	EKHWS200B 3Z2	EKHWS300B 3Z2	EKHWSU150 B3V3	EKHWSU200 B3V3	EKHWSU300 B3V3
Casing	Colour			Neutral white							
	Material			Epoxy-coated mild steel							
Dimensions	Packing	Height	mm	950	1,200	1,650	1,200	1,650	1,040	1,280	1,735
		Width	mm	600	600	600	600	600	600	600	600
		Depth	mm	600	600	600	600	600	600	600	600
	Unit	Height	mm	900	1,150	1,600	1,150	1,600	1,015	1,265	1,715
		Width	mm	580	580	580	580	580	580	580	580
		Depth	mm	580	580	580	580	580	580	580	580
Weight	Unit		kg	37	45	59	45	59	38	46	60
	Packed Unit		kg	42	51	66	51	66	43	52	67
Packing	Material			EPS							
				Carton							
	Weight		kg	3	4	5	4	5	3	4	5
Main components	Tank	Water volume	l	150	200	300	200	300	150	200	285
		Material		Stainless steel (DIN 1.4521)							
		Max. temperature	°C	85	85	85	85	85	85	85	85
		Max. water pressure	bar	10	10	10	10	10	10	10	10
Tank	Insulation	Material		Polyurethane foam							
		Min. thickness	mm	40	40	40	40	40	40	40	40
Main components	Heat exchanger	Quantity		1	1	1	1	1	1	1	1
		Material		Duplex steel LDX 2101							
	Booster heater	Quantity		1	1	1	1	1	1	1	1
		Capacity	kW	3	3	3	3	3	3	3	3
	3-Way Valve	Coefficient of flow (kV)	m	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
		Inlet	inch	Rp1							
		Outlet	inch	2xRp1							
Temperature sensor	Cable length		m	12	12	12	12	12	12	12	12
Piping connections	Water inlet H/E Diameter		inch	G 3/4 (female)							
	Water outlet H/E Diameter		inch	G 3/4 (female)							
	Cold water in Diameter		inch	G 3/4 (female)							
	Hot water out Diameter		inch	G 3/4 (female)							
	Recirculation connection		inch	G 3/4 (female)							

2-2 ELECTRICAL SPECIFICATIONS				EKHWS150B 3V3	EKHWS200B 3V3	EKHWS300B 3V3	EKHWS200B 3Z2	EKHWS300B 3Z2	EKHWSU150 B3V3	EKHWSU200 B3V3	EKHWSU300 B3V3
Unit	Power Supply	Phase		1~	1~	1~	2~	2~	1~	1~	1~
		Frequency	Hz	50	50	50	50	50	50	50	50
		Voltage	V	230	230	230	400	400	230	230	230
	Nominal running current		A	13	13	13	7.5	7.5	13	13	13
	Fuse	Size	A	20	20	20	20	20	20	20	20
		Phase		1~	1~	1~	2~	2~	1~	1~	1~

3 Capacity tables

3 - 1 Cooling capacity tables

The ALTHERMA by Daikin heat pump in combination with the optional domestic hot water tank provide hot water for household usage.
The below mentioned date allow a proper selection of the domestic hot water tank size for maximum comfort and efficiency.

(1) Domestic hot water volume:

The volume of hot water available for domestic usage depends on the physical volume of the tank, on the domestic water setpoint temperature and on the temperature spreading in the tank.
Therefore we define the equivalent hot water volume (EHWV).

Definition:
EHWV = the volume of hot water available for domestic usage at a temperature of 40°C.
40°C is considered a comfortable domestic hot water temperature.

Tank	Setpoint temp. (°C)	EHWV (l)	Usage pattern		
			Modest	Medium	High
150L	55	110	-	-	-
	65	150	+	-	-
	75	175	++	+	-
200L	55	160	+	-	-
	65	200	++	+	-
	75	240	++	++	-
300L	55	295	++	++	-
	65	385	++	++	+
	75	435	++	++	++

Grade ++ Excessive availability of domestic hot water.
\+ Sufficient availability of domestic hot water.
\- Temporary shortage of domestic hot water can occur.

Usage pattern **Modest** Daily demand up tp 220 l -> typcial 2-persons usage pattern.
Medium Daily demand up to 325 l -> typical 3 to 4 persons usage pattern.
High Daily demand up to 550 l -> 4 to 6 persons usage pattern.

(2) Heat-up time:

Definition:
Heat-up time The time required to reheat the domestic hot water tank to 55°C after tapping a certain volume of hot water at 40°C.
note: changing the field settings (see installation manual) can influence the heat-up time.

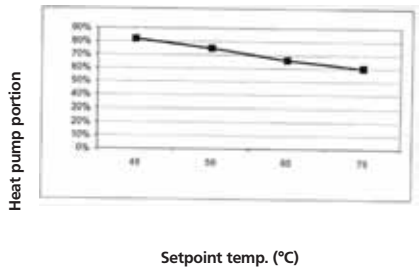
Tank	Setpoint temp. (°C)	**Heat-up time for 150 L (bath) <min>**	**Heat-up time for 50 L (shower) <min>**
150L	55	60	45
200L	55	60	40
300L	55	50	30

Conditions for testing: Ta = 7°CDB / 6°CWB, Troom = 20°C, Tstart = 10°C, outdoor unit type: ERHQ008

(3) Efficiency of domestic hot water production:

In the ALTHERMA by Daikin system both the heat pump and the electric booster heater supply the energy to produce domestic hot water.
The higher the portion of energy supplied by the heat pump, the more energy efficient the system is.
Lowering the setpoint temperature increases the portion of energy supplied by the heat pump and thus the efficiency of the system.

Definition:
Heat pump portion Percentage of energy supplied by the heat pump in the total energy need for domestic hot water.



Conditions:

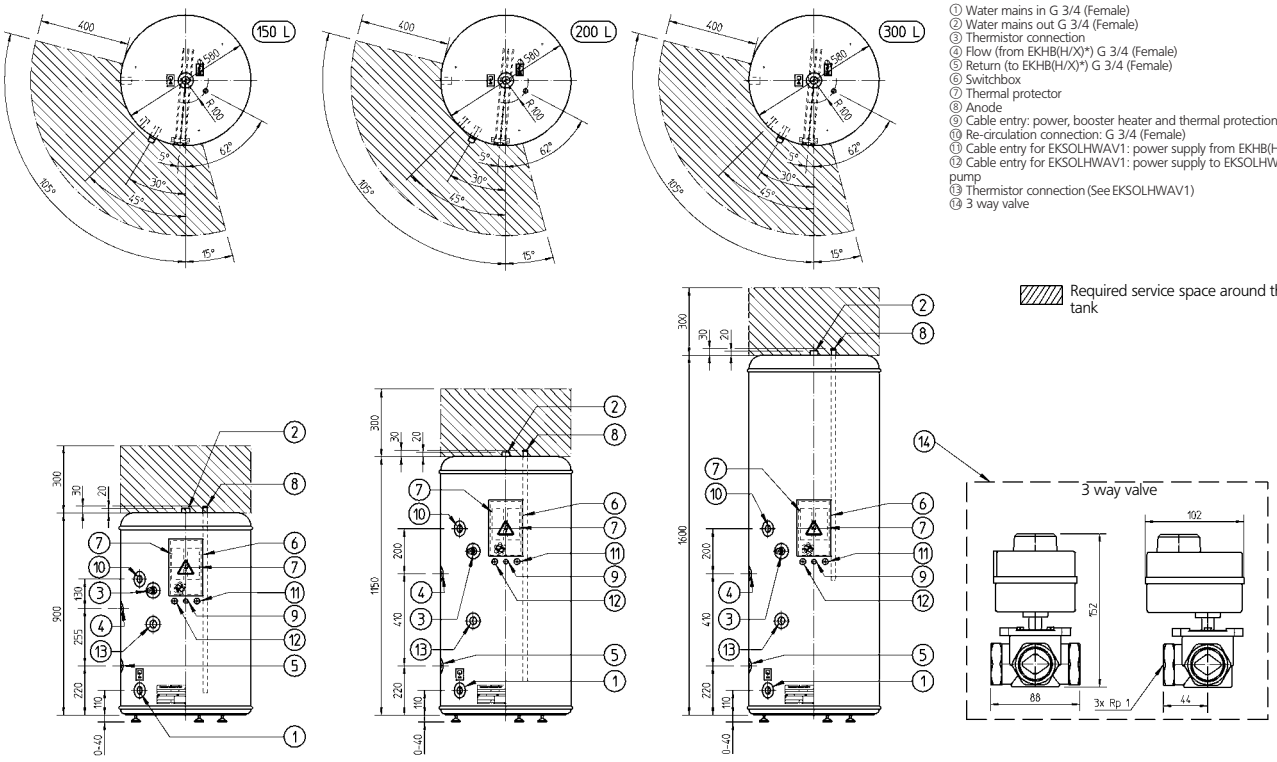
Real life condition	Simulation of a daily usage based upon 'medium' usage pattern.
Outdoor temperature	7°CDB / 6°CWB
Room temperature	20°CDB
Outdoor unit type	ERHQ008
Tank type	200l
Field settings	Default field settings (see installation manual).

4TW57949-1

4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

EKHWS-B

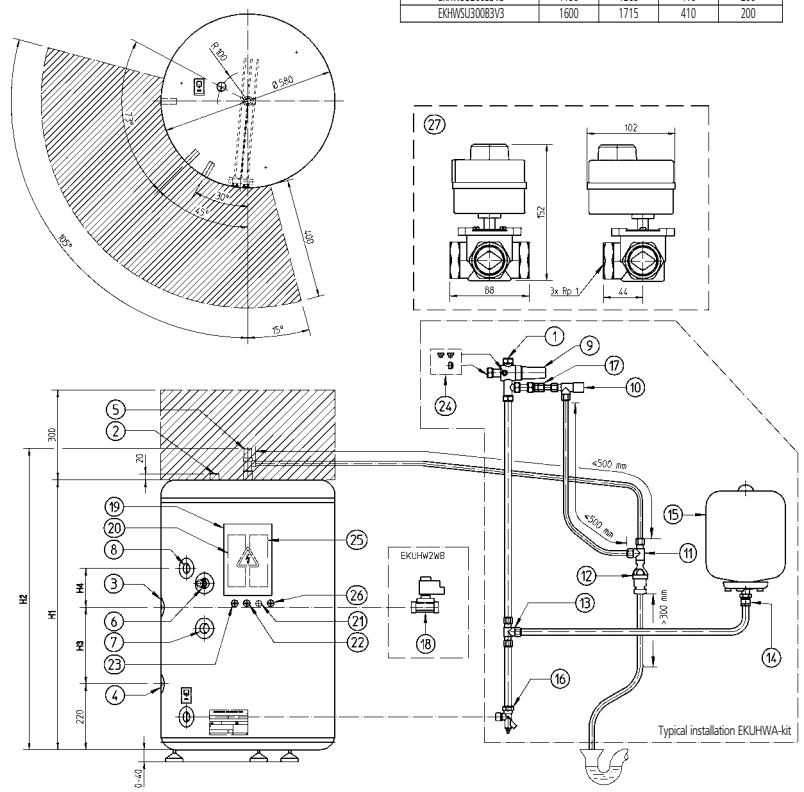


① Water mains in G 3/4 (Female)
② Water mains out G 3/4 (Female)
③ Thermistor connection
④ Flow (from EKHB(H/X)*) G 3/4 (Female)
⑤ Return (to EKHB(H/X)*) G 3/4 (Female)
⑥ Switchbox
⑦ Thermal protector
⑧ Anode
⑨ Cable entry: power, booster heater and thermal protection cable
⑩ Re-circulation connection: G 3/4 (Female)
⑪ Cable entry for EKSOLHWAV1: power supply from EKHB(H/X)
⑫ Cable entry for EKSOLHWAV1: power supply to EKSOLHWAV1 pump
⑬ Thermistor connection (See EKSOLHWAV1)
⑭ 3 way valve

3TW57944-1

EKHWSU-B

Model	H1	H2	H3	H4
EKHWSU150B3V3	900	1015	255	130
EKHWSU200B3V3	1150	1265	410	200
EKHWSU300B3V3	1600	1715	410	200



Water connections

①	Water IN (cold)	22MM
②	Water OUT (hot)	G 3/4 (Female)
③	Flow from EKHB(H/X)*	G 3/4 (Female)
④	Return to EKHB(H/X)*	G 3/4 (Female)
⑤	Temperature relief valve	15MM
⑥	Thermistor connection	
⑦	Thermistor connection (See EKSOLHWAV1)	G 1/2 (Female)
⑧	Re-circulation hole	G 3/4 (Combinations compliant to NF-PAC)

Water connections kit

⑨	Pressure reducing valve	22MM-22MM
⑩	Expansion relief valve	22MM-22MM
⑪	T-piece (to tundish)	15MM-15MM-G 1/2 (Female)
⑫	Tundish	22MM-15MM
⑬	T-piece (to expansion vessel)	22MM-22MM-22MM
⑭	Adapter (expansion vessel)	22MM-G 3/4 (Female)
⑮	Expansion vessel	G 3/4 (Male)
⑯	Drain valve	22MM-G 2/4 (Female)
⑰	Solenoid valve	3/4" female BSP-3/4" hale BSP

Other

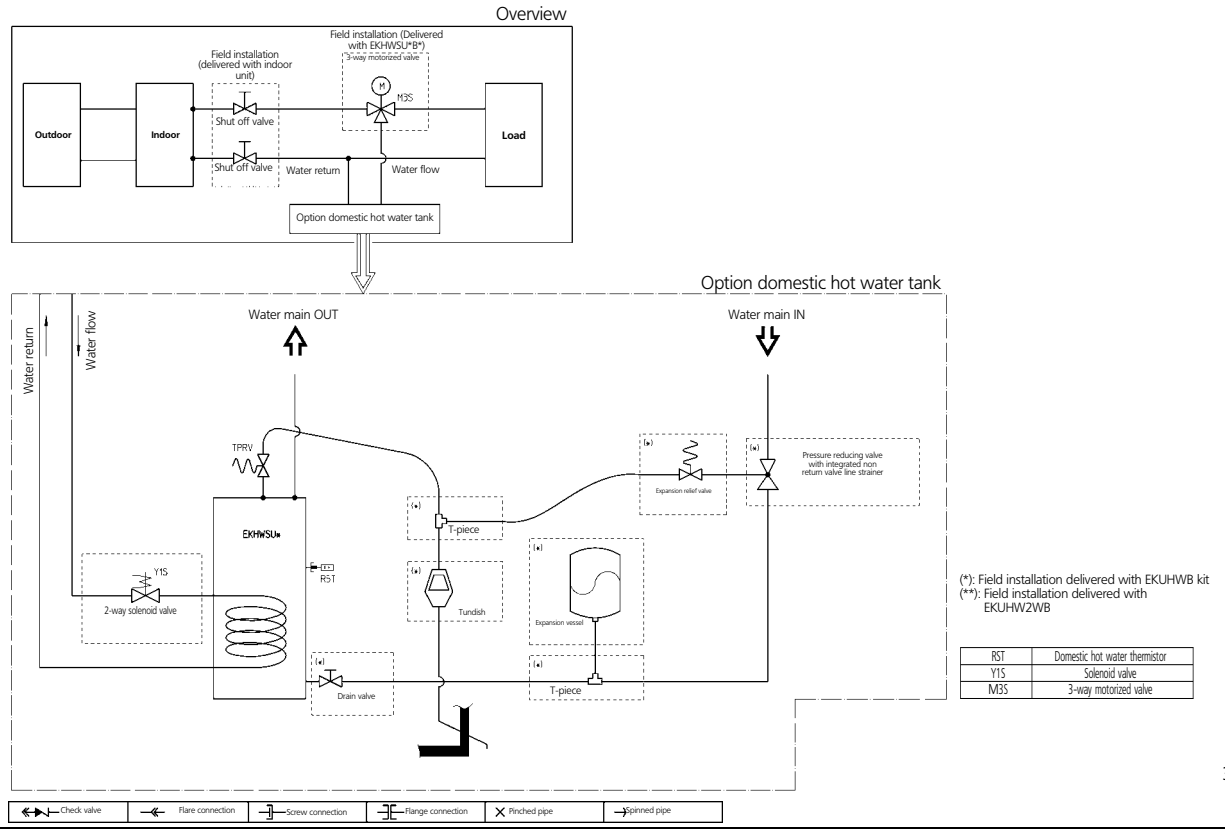
⑱ EKUHW2WB kit: solenoid valve (only with EKSOLHWAV1) Rp 3/4 - Rp 3/4
⑲ Switchbox
⑳ Thermal protector 1+Thermostat
㉑ Cable entry: power supply booster heater and thermal protector cable
㉒ Cable entry for EKUHW2WB: power supply to solenoid valve
㉓ Cable entry: power supply booster heater and thermal protector cable
㉔ Blind stop + 2 plastic screw-on closing caps for pressure reducing valve
㉕ Thermal protector 2+Thermostat
㉖ Cable entry for EKSOLHWAV1: power supply to EKSOLHWAV1 pump
㉗ 3 way valve 3x Rp1

Required service space

3TW57944-2A

5 Piping diagram

EKHWSU-B



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EKHWE

1 Features

- Enameled domestic hot water tank
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHWE150A3V3	EKHWE200A3V3	EKHWE300A3V3	EKHWE200A3Z2	EKHWE300A3Z2	EKHWET150A3V3
Mounting				Floor	Floor	Floor	Floor	Floor	Wall
Casing	Colour			RAL9010					
	Material			Epoxy coated steel					
Dimensions	Packing	Height	mm	1,460	1,835	1,830	1,835	1,830	1,460
		Width	mm	615	615	720	615	720	615
		Depth	mm	625	625	730	625	730	625
	Unit	Height	mm	1,205	1,580	1,572	1,580	1,572	1,205
		Diameter	mm	545	545	660	545	660	545
Weight	Unit		kg	80	104	140	104	140	82
	Packed Unit		kg	92	117	158	117	158	94
Packing	Material			Carton					
				Wood					
				EPS					
	Weight		kg	13	13	18	13	18	12
Main components	Tank	Water volume	l	150	200	300	200	300	150
		Material		Enamel coated steel acc. DIN4753TL2					
		Max. temperature	°C	75	75	75	75	75	75
		Max. water pressure	bar	10	10	10	10	10	10
Tank	Insulation	Material		HFC-free Polyurethane foam					
		Min. thickness	mm	47.5	47.5	50	47.5	50	47.5
Main components	Heat exchanger	Quantity		1	1	1	1	1	1
		Material		Enamel coated steel acc. DIN4753TL2					
		Surface	m²	0.5	0.8	1.06	0.8	1.06	0.5
	Booster heater	Quantity		1.0	1.0	1.0	1.0	1.0	1.0
		Capacity	kW	3.0	3.0	3.0	3.0	3.0	3.0
	3-Way Valve	Coefficient of flow (kV)	m	12.0	12.0	12.0	12.0	12.0	12.0
		Inlet	inch	RP 1"					
		Outlet	inch	2 x RP 1"					
Temperature sensor	Cable length		m	12.0	12.0	12.0	12.0	12.0	12.0
Piping connections	Water inlet H/E Diameter		inch	Rp 3/4"					
	Water outlet H/E Diameter		inch	Rp 3/4"					
	Cold water in Diameter		inch	G 3/4"					
	Hot water out Diameter		inch	G 3/4"					
	Recirculation connection		inch	G3/4"					

2-2 ELECTRICAL SPECIFICATIONS				EKHWE150A3V3	EKHWE200A3V3	EKHWE300A3V3	EKHWE200A3Z2	EKHWE300A3Z2	EKHWET150A3V3
Unit	Power Supply	Phase		1~	1~	1~	2~	2~	1~
		Frequency	Hz	50	50	50	50	50	50
		Voltage	V	230	230	230	400	400	230
	Nominal running current		A	13	13	13	7.5	7.5	13
	Fuse	Size	A	20	20	20	20	20	20
		Pole		2	2	2	2	2	2

3 Capacity tables

3 - 1 Cooling capacity tables

The ALTHERMA by Daikin heat pump in combination with the optional domestic hot water tank provide hot water for household usage.
The below mentioned date allow a proper selection of the domestic hot water tank size for maximum comfort and efficiency.

(1) Domestic hot water volume:

The volume of hot water available for domestic usage depends on the physical volume of the tank, on the domestic water setpoint temperature and on the temperature spreading in the tank.
Therefore we define the equivalent hot water volume (EHWV).

Definition:
EHWV = the volume of hot water available for domestic usage at a temperature of 40°C.
40°C is considered a comfortable domestic hot water temperature.

Tank	Setpoint temp. (°C)	EHWV (l)	Usage pattern		
			Modest	Medium	High
150L	55	125	-	-	-
	65	165	+	-	-
	75	185	++	+	-
200L	55	200	+	-	-
	65	230	++	+	-
	75	260	++	++	-
300L	55	320	++	++	-
	65	400	++	++	+
	75	435	++	++	++

Grade ++ Excessive availability of domestic hot water.
\+ Sufficient availability of domestic hot water.
\- Temporary shortage of domestic hot water can occur.

Usage pattern **Modest** Daily demand up tp 220 l -> typcial 2-persons usage pattern.
Medium Daily demand up to 325 l -> typical 3 to 4 persons usage pattern.
High Daily demand up to 550 l -> 4 to 6 persons usage pattern.

(2) Heat-up time:

Definition:
Heat-up time The time required to reheat the domestic hot water tank to 55°C after tapping a certain volume of hot water at 40°C.
note: changing the field settings (see installation manual) can influence the heat-up time.

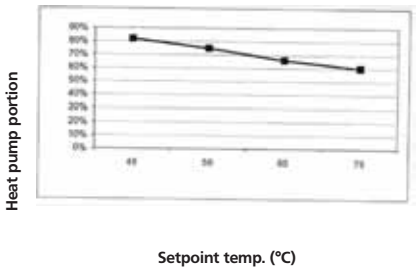
Tank	Setpoint temp. (°C)	**Heat-up time for 150 L (bath) <min>**	**Heat-up time for 50 L (shower) <min>**
150L	55	60	45
200L	55	60	40
300L	55	50	30

Conditions for testing: Ta = 7°CDB / 6°CWB, Troom = 20°C, Tstart = 10°C, outdoor unit type: ERHQ011

(3) Efficiency of domestic hot water production:

In the ALTHERMA by Daikin system both the heat pump and the electric booster heater supply the energy to produce domestic hot water.
The higher the portion of energy supplied by the heat pump, the more energy efficient the system is.
Lowering the setpoint temperature increases the portion of energy supplied by the heat pump and thus the efficiency of the system.

Definition:
Heat pump portion Percentage of energy supplied by the heat pump in the total energy need for domestic hot water.



Conditions:

Real life condition	Simulation of a daily usage based upon 'medium' usage pattern.
Outdoor temperature	7°CDB / 6°CWB
Room temperature	20°CDB
Outdoor unit type	ERHQ011
Tank type	200l
Field settings	Default field settings (see installation manual).

(4) Heat losses of domestic hot water tank:

Tank EKHWE	Heat losses* [kWh/24h]
150L	1.7
200L	1.9
300L	2,5

* Heat losses at △45°C between hot water in tank and surrounding air.

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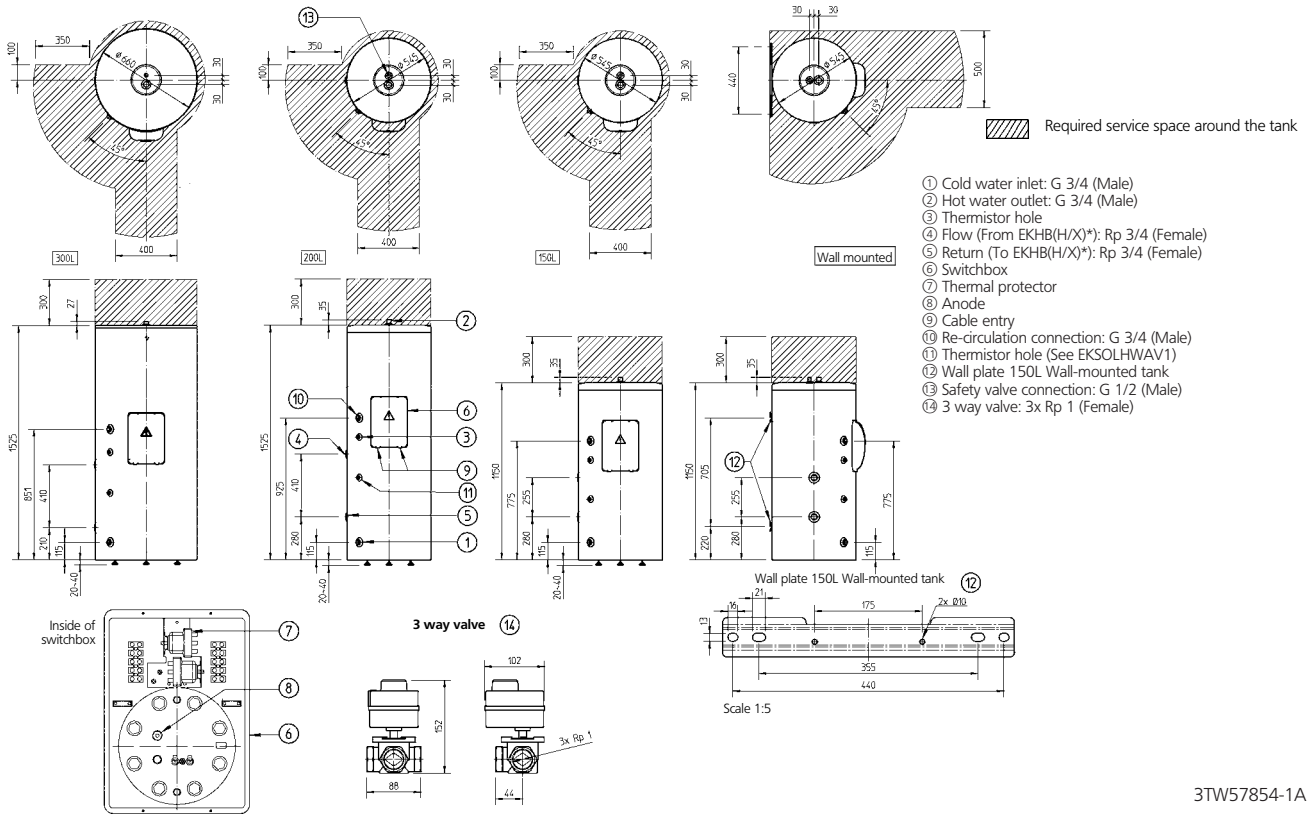
4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

EKHWE



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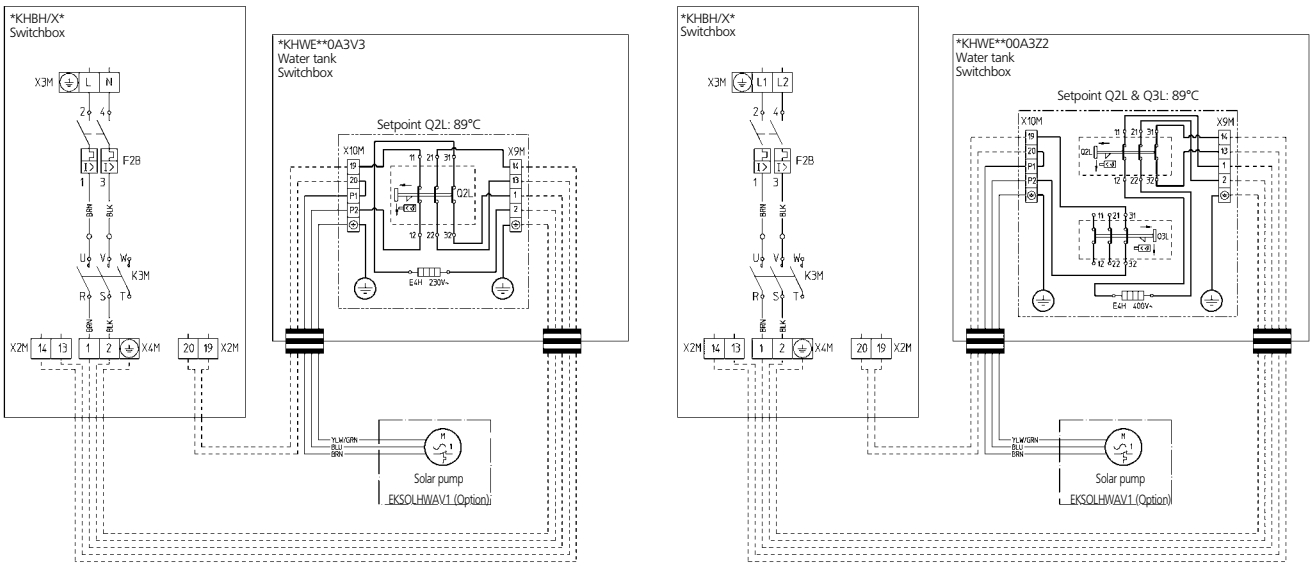
5 Wiring diagram

5 - 1 Wiring diagram

EKHWE



E4H	: Booster heater
F2B	: Fuse booster heater
K3M	: Contactor booster heater
L	: Line
N	: Neutral
Q2L	: Thermal protector Booster heater
Q3L	: Thermal protector 2 Hot water tank
X2M–X4M	: Terminal block
X9M–X10M	: Terminal block

Notes:

1 : Field wiring
: Field wiring
: Wire colour
: Terminal strip
: Protective earth

2 BLK=Black RED=Red BLU=Blue WHT=White PNK=Pink YLW=Yellow BRN=Brown GRY=Grey GNR=Green ORG=Orange VIO=Violet

3 Please refer to the *KHWE* manual for more installation details

3TW57856-1A

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EKSOLHWAV1

1 Features

- Connectable to solar collectors
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

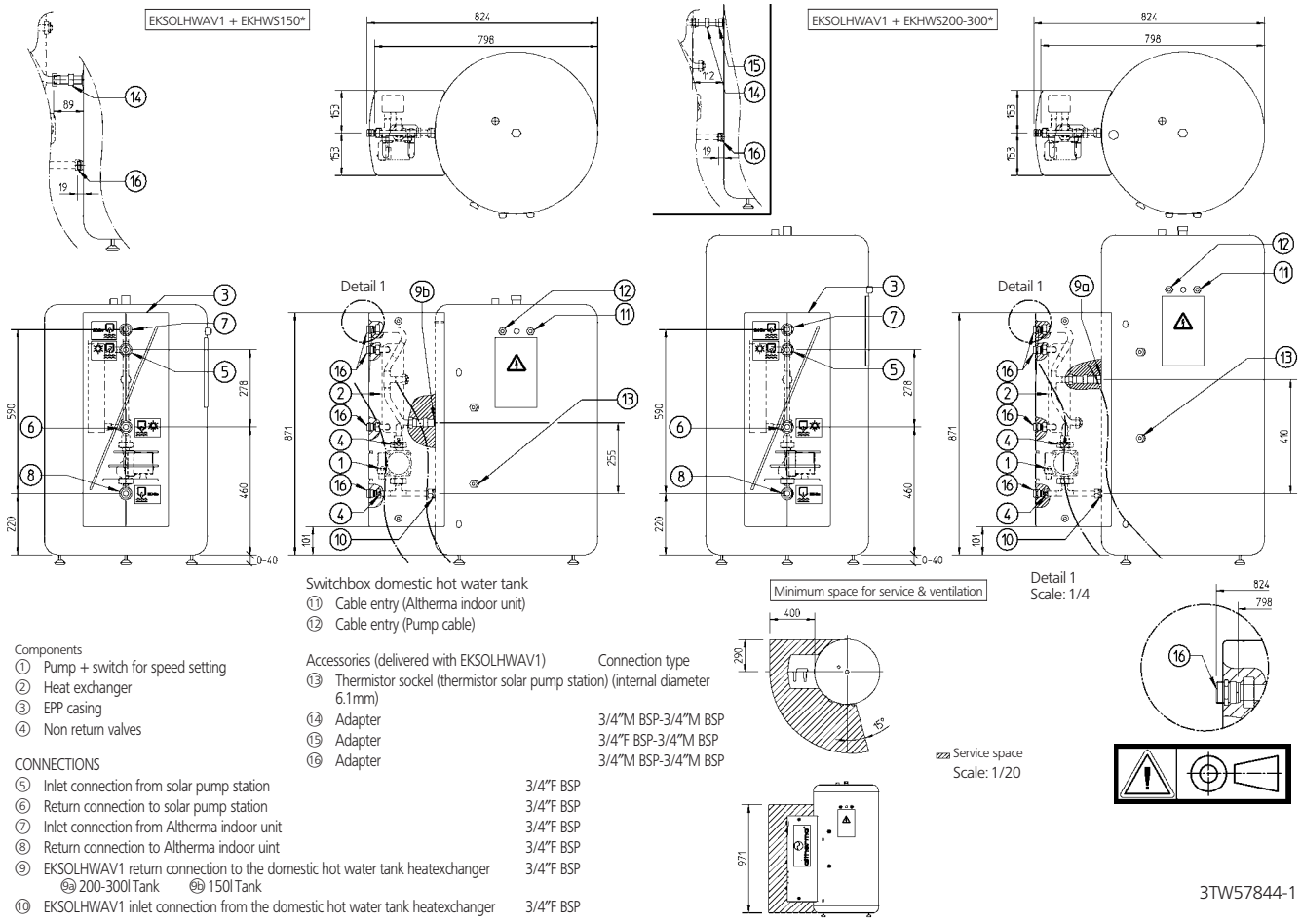
2-1 TECHNICAL SPECIFICATIONS				EKSOLHWAV1
Dimensions	Packing	Height	mm	795
		Width	mm	340
		Depth	mm	295
	Unit	Height	mm	770
		Width	mm	305
		Depth	mm	270
Weight	Unit		kg	8
	Packed Unit		kg	9
Packing	Material			Carton
	Weight		kg	1
Heat Exchanger	Type			Brazed plate
	Pressure drop	Solar side	kPa	21.5
	Maximum inlet temperature	Solar side	°C	110
	Capacity		W/K	1,400
	Logarithmic mean temperature difference (LMTD)		K	5
Pump	Type			water cooled
	Number of speeds			3
	Power input		W	46
Sound	Sound Pressure		dBA	27
Water circuit	Piping connections diameter		inch	3/4" FBSP
Insulation material				EPP
Ambient temperature	Maximum		°C	35
	Minimum		°C	1

2-2 ELECTRICAL SPECIFICATIONS				EKSOLHWAV1
Unit	Power Supply	Phase		1~
		Frequency	Hz	50
		Voltage	V	220-240
Voltage range	Minimum			-10%
	Maximum			+10%
Power Supply Intake				indoor unit

3 Dimensional drawing & centre of gravity

3 - 1 Dimensional drawing

EKSOLHWAV1+EKHWS



Switchbox domestic hot water tank
⑪ Cable entry (Altherma indoor unit)
⑫ Cable entry (Pump cable)

Components
① Pump + switch for speed setting
② Heat exchanger
③ EPP casing
④ Non return valves

CONNECTIONS

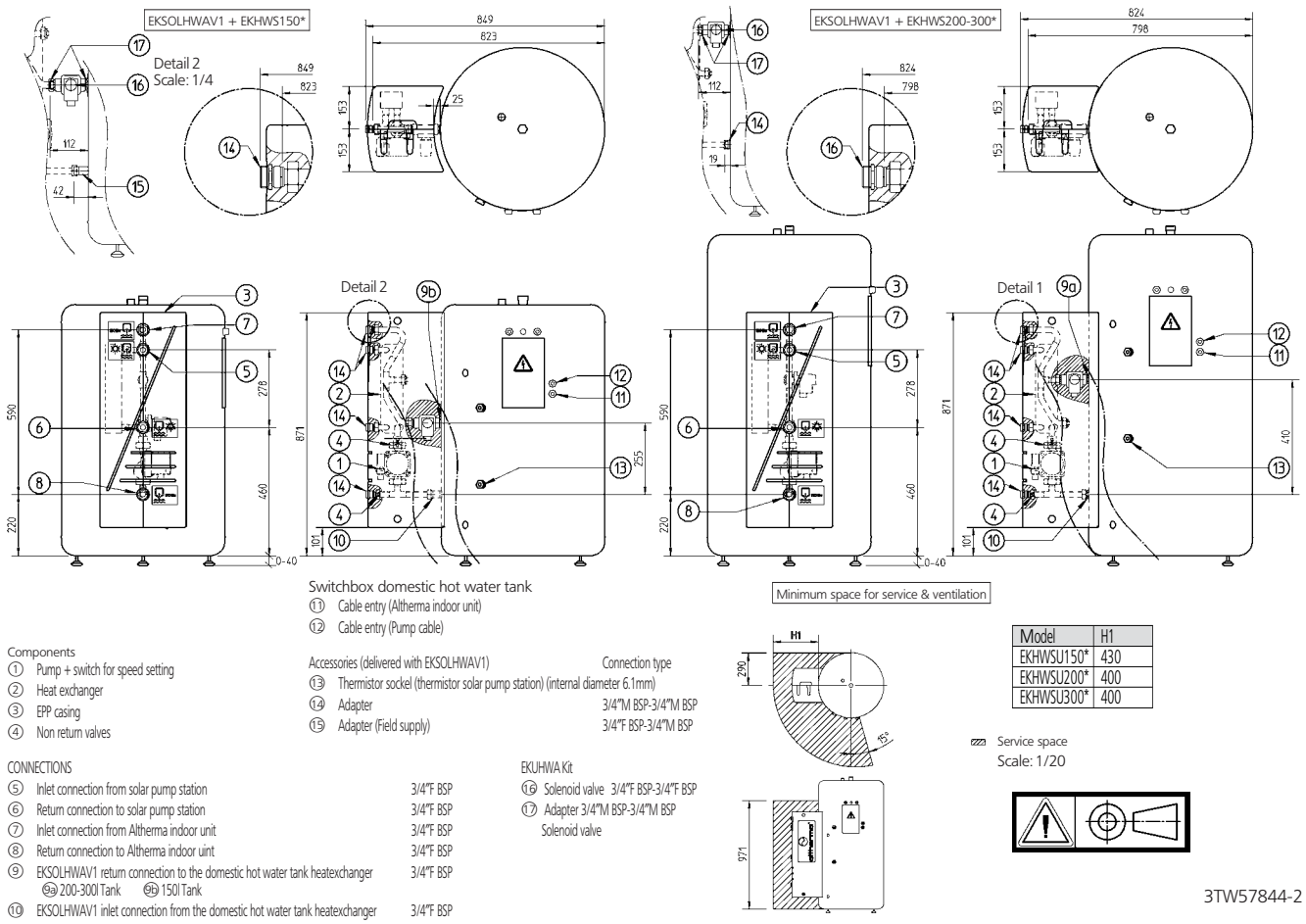
⑤	Inlet connection from solar pump station	3/4"F BSP
⑥	Return connection to solar pump station	3/4"F BSP
⑦	Inlet connection from Altherma indoor unit	3/4"F BSP
⑧	Return connection to Altherma indoor uint	3/4"F BSP
⑨	EKSOLHWAV1 return connection to the domestic hot water tank heatexchanger ⑨a 200-300l Tank ⑨b 150l Tank	3/4"F BSP
⑩	EKSOLHWAV1 inlet connection from the domestic hot water tank heatexchanger	3/4"F BSP

Accessories (delivered with EKSOLHWAV1)	Connection type
⑬ Thermistor sockel (thermistor solar pump station) (internal diameter 6.1mm)	
⑭ Adapter	3/4"M BSP-3/4"M BSP
⑮ Adapter	3/4"F BSP-3/4"M BSP
⑯ Adapter	3/4"M BSP-3/4"M BSP

3 Dimensional drawing & centre of gravity

3 - 1 Dimensional drawing

EKSOLHWAV1+EKHWSU



Components
① Pump + switch for speed setting
② Heat exchanger
③ EPP casing
④ Non return valves

Accessories (delivered with EKSOLHWAV1)	Connection type
⑬ Thermistor sockel (thermistor solar pump station) (internal diameter 6.1mm)	
⑭ Adapter	3/4"M BSP-3/4"M BSP
⑮ Adapter (Field supply)	3/4"F BSP-3/4"M BSP

CONNECTIONS

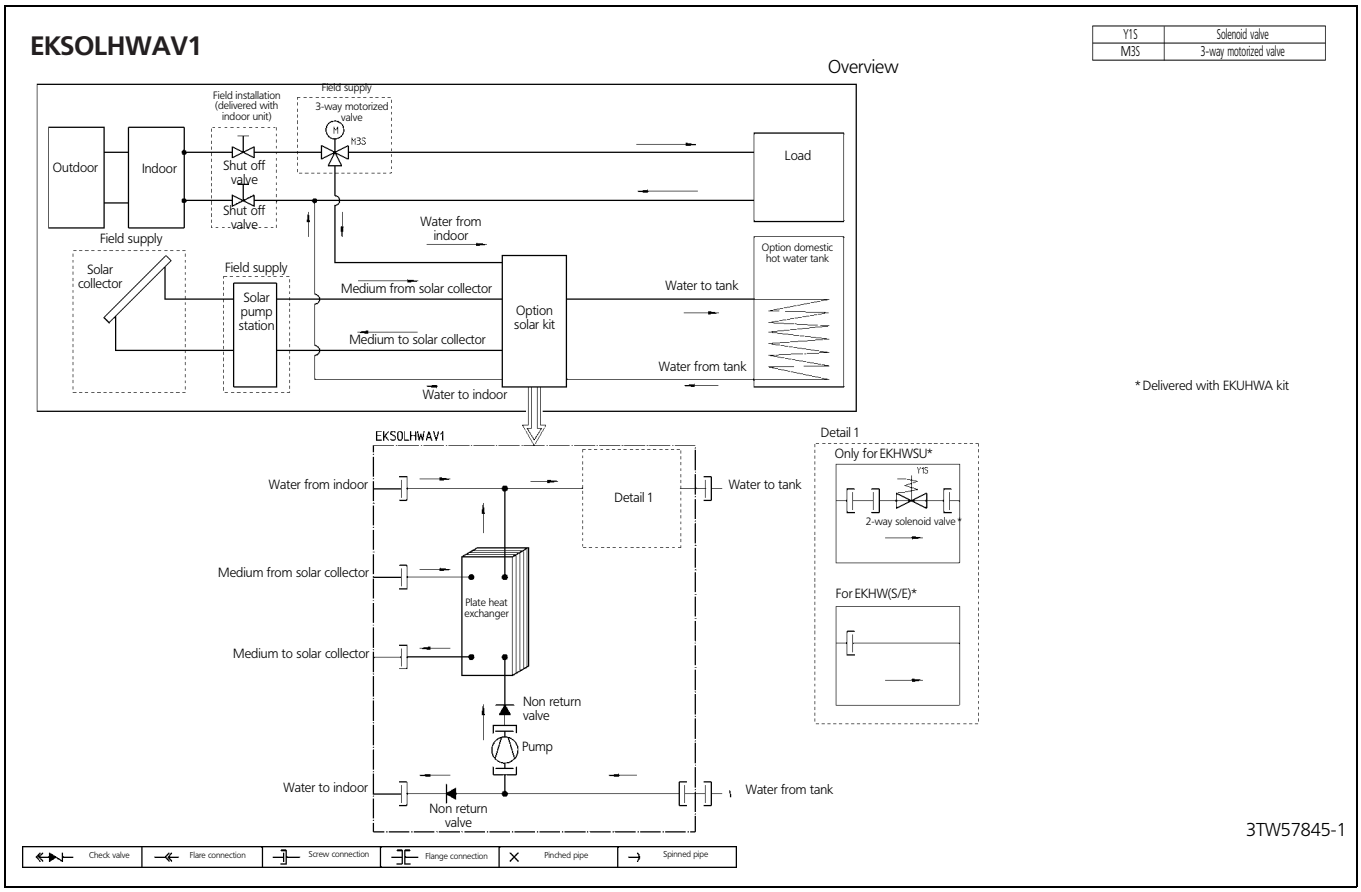
⑤ Inlet connection from solar pump station	3/4"F BSP
⑥ Return connection to solar pump station	3/4"F BSP
⑦ Inlet connection from Altherma indoor unit	3/4"F BSP
⑧ Return connection to Altherma indoor uint	3/4"F BSP
⑨ EKSOLHWAV1 return connection to the domestic hot water tank heatexchanger ⑨a 200-300l Tank ⑨b 150l Tank	3/4"F BSP
⑩ EKSOLHWAV1 inlet connection from the domestic hot water tank heatexchanger	3/4"F BSP

EKUHWA Kit

⑯ Solenoid valve	3/4"F BSP-3/4"F BSP
⑰ Adapter 3/4"M BSP-3/4"M BSP Solenoid valve	

Model	H1
EKHWSU150*	430
EKHWSU200*	400
EKHWSU300*	400

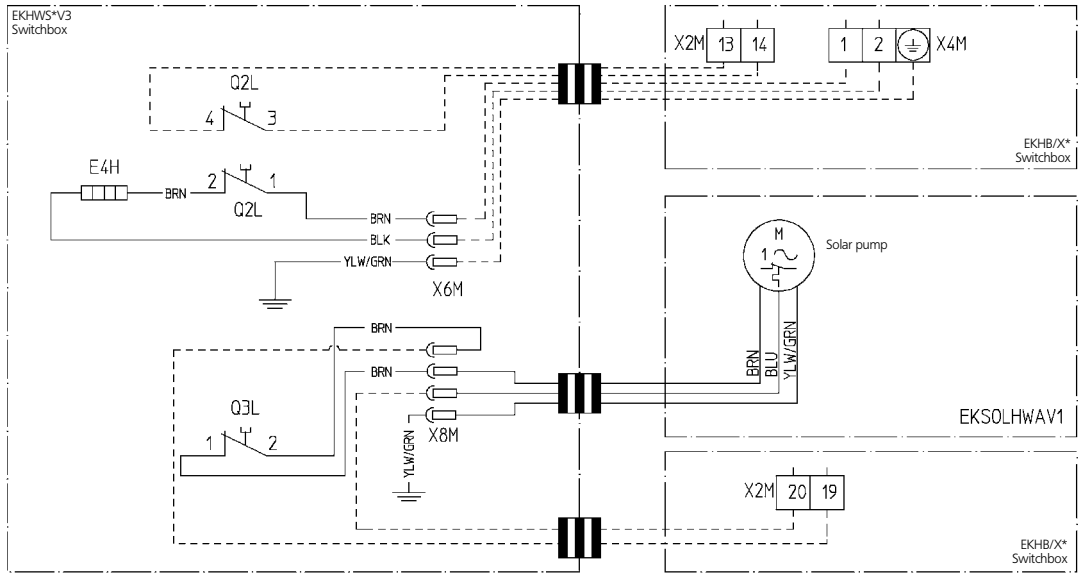
4 Piping diagram



5 Wiring diagram

5 - 1 Wiring diagram

EKSOLHWAV1 with EKHWS*V3



E4H	: Booster heater
F2B	: Fuse booster heater
F2U	: Fuse 5A/250V
K3M	: Contactor booster heater
L	: Line
N	: Neutral
Q2T	: Thermostat protector 1 domestic hot water tank
Q2L	: Thermal protector
Q3L	: Thermal protector 2 Booster heater
Q3T	: Thermostat protector 2 domestic hot water tank
X2M–X4M	: Terminal block
X5M1–X7M	: Terminal block
Y1S	: Solenoid valve

Notes:

1 : Field wiring
: Field wiring
BLK : Wire colour
: Terminal strip
: Protective earth

2 BLK=Black RED=Red BLU=Blue WHT=White PNK=Pink YLW=Yellow BRN=Brown GRY=Grey GNR=Green ORG=Orange VIO=Violet

3 For more installation details please refer to the relevant installation manual.

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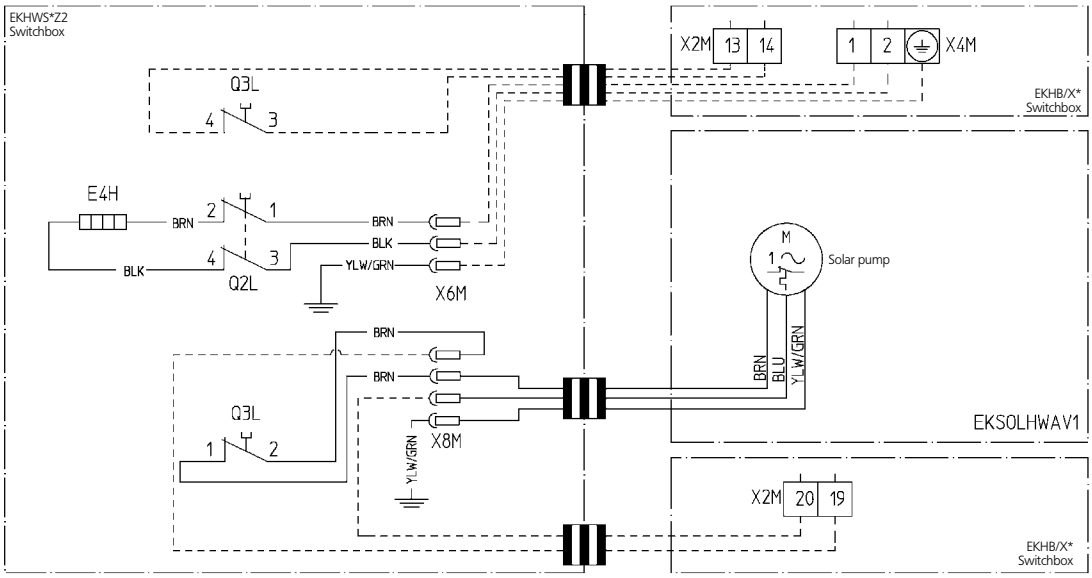
EKSOLHWAV1 with EKHWS*Z2



E4H	: Booster heater
F2B	: Fuse booster heater
F2U	: Fuse 5A/250V
K3M	: Contactor booster heater
L	: Line
N	: Neutral
Q2T	: Thermostat protector 1 domestic hot water tank
Q2L	: Thermal protector
Q3L	: Thermal protector 2 Booster heater
Q3T	: Thermostat protector 2 domestic hot water tank
X2M–X4M	: Terminal block
X5M1–X7M	: Terminal block
Y1S	: Solenoid valve

Notes:

1 : Field wiring
: Field wiring
BLK : Wire colour
: Terminal strip
: Protective earth

2 BLK=Black RED=Red BLU=Blue WHT=White PNK=Pink YLW=Yellow BRN=Brown GRY=Grey GNR=Green ORG=Orange VIO=Violet

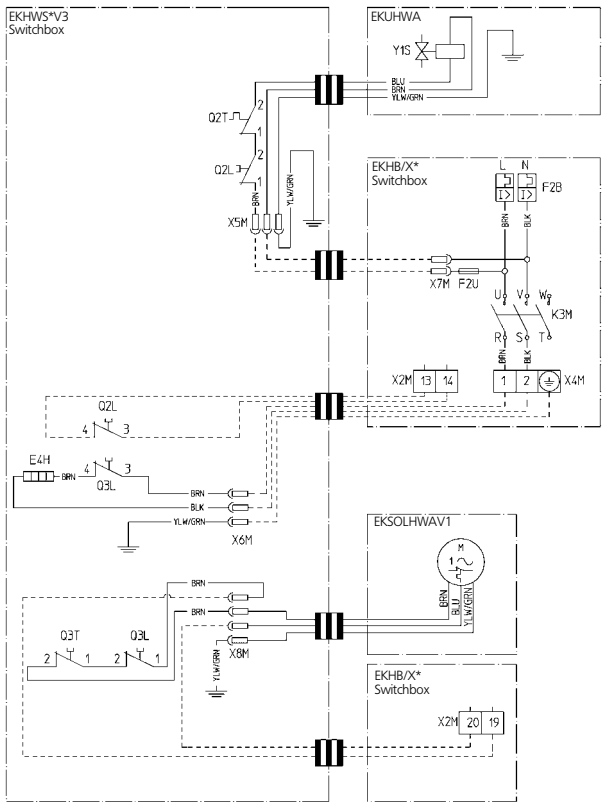
3 For more installation details please refer to the relevant installation manual.

3TW57846-1

5 Wiring diagram

5 - 1 Wiring diagram

EKSOLHWAV1 with EKHWSU



Notes:

1 : Field wiring
: Field wiring
BLK : Wire colour
: Terminal strip
: Protective earth

2 BLK=Black RED=Red BLU=Blue WHT=White PNK=Pink YLW=Yellow
BRN=Brown GRY=Grey GNR=Green ORG=Orange VIO=Violet

3 For more installation details please refer to the relevant installation manual.

E4H	: Booster heater
F2B	: Fuse booster heater
F2U	: Fuse 5A/250V
K3M	: Contactor booster heater
L	: Line
N	: Neutral
Q2T	: Thermostat protector 1 domestic hot water tank
Q2L	: Thermal protector
Q3L	: Thermal protector 2 Booster heater
Q3T	: Thermostat protector 2 domestic hot water tank
X2M–X4M	: Terminal block
X5M1–X7M	: Terminal block
Y1S	: Solenoid valve

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EKRTW

1 Features

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKRTW
Dimensions	Unit	Height	mm	87
		Width	mm	125
		Depth	mm	34
	Packing	Height	mm	65
		Width	mm	175
		Depth	mm	100
Weight	Unit	Net	g	215
		Gross	g	440
Packing	Material			Carton
	Weight		g	55
Ambient temperature	Storage		°C	-20~60
	Operation		°C	0~50
Temperature setting range	Heating		°C	4-37
	Cooling		°C	4-37
Temperature setting resolution			°C	0.5
Clock				Yes
Regulation function				Proportional band
Features	Item			Heating only
				Heating and cooling
				Comfort function mode (= comfort setpoint)
				Reduced function mode (=night setback setpoint)
				Scheduled function mode(= schedule timer)
				Number of setpoint changes
	Note			12/day
	Item			Holiday function mode
				Off function (with integrated frost protection)
				Setpoint limitation
				Keylock function

2-2 ELECTRICAL SPECIFICATIONS			EKRTW
Power Supply	Voltage		battery powered 3* AA-LR6 (alkaline)
Connection			Wired
Maximum rated switching current (at 230VAC)		A	0.1

3 Options

Additional information:

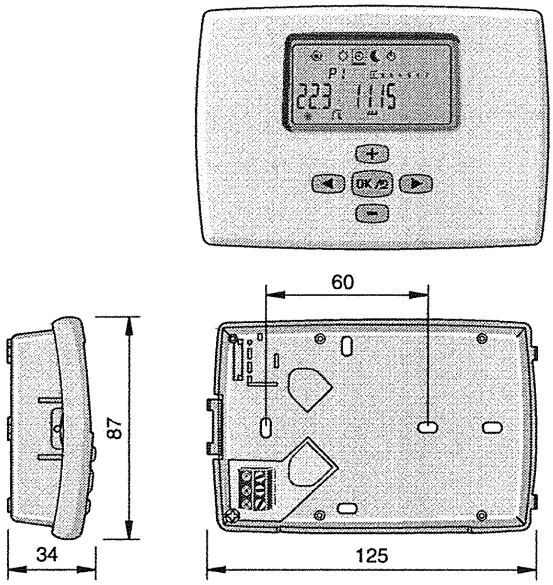
comfort function mode	Use this mode for a fixed temperature on comfort level. (comfort setpoint default on 21°C in heating mode, 24°C in cooling mode)
reduced function mode	Use this mode for a fixed temperature on reduced level. (reduced setpoint default on 17°C in heating mode, 28°C in cooling mode)
scheduled function mode	Use this mode to let your installation be controlled by the schedule timer. The actions programmed in the schedule timer will be executed automatically according to the actual time. This function uses the scheduled temperature setpoint.
holiday function mode	Use this mode to set a fixed temperature during a long absence.
off function	Use this mode to switch of your installation. Integrated frost protection remains activated. (frost protection default on 4°C in heating mode)
setpoint limitation	Use this function to limit the setpoint range for the end customer.
floor temperature protection	Use this function to set a maximum and a minimum floor temperature.

4TW57991-2

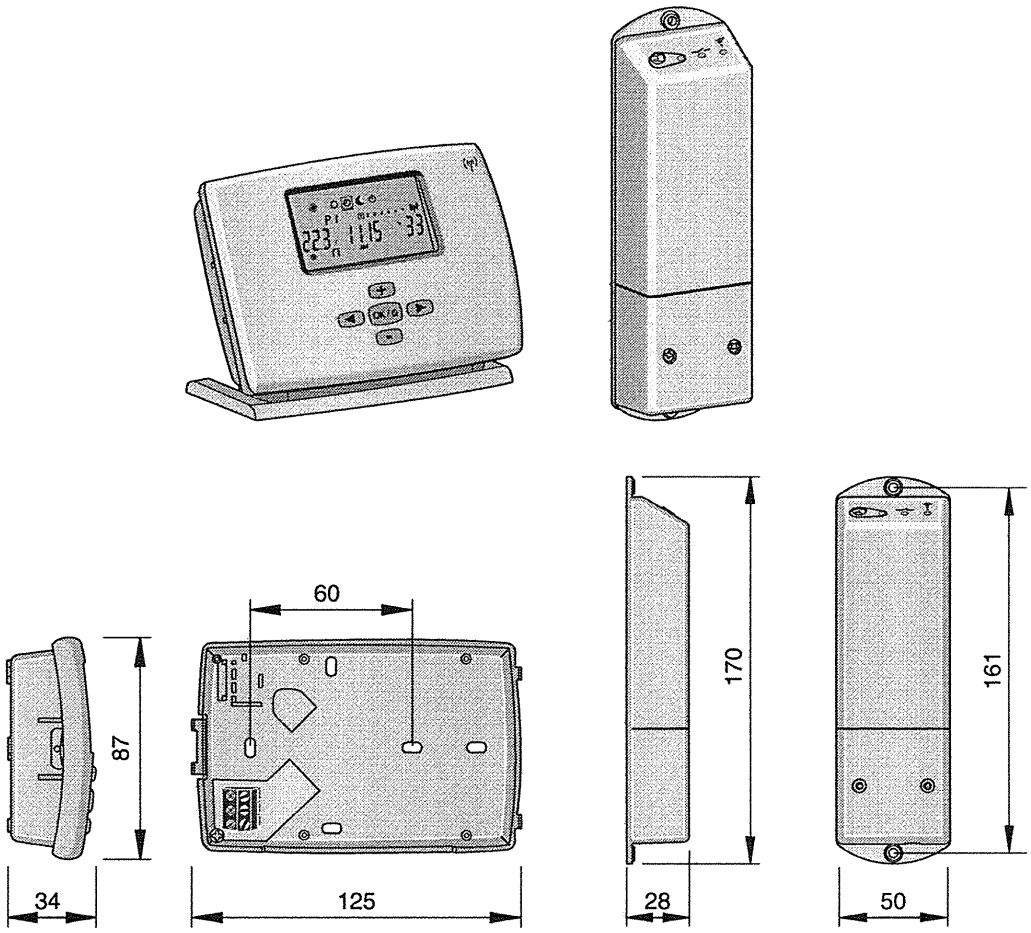
4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

EKRTW



EKRTR



4TW57994-1

TABLE OF CONTENTS

EKRTR

1 Features

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKRTR thermostat
Dimensions	Unit	Height	mm	87
		Width	mm	125
		Depth	mm	34
	Packing	Height	mm	70
		Width	mm	200
		Depth	mm	140
Weight	Unit	Net	g	210
		Gross	g	665
Packing	Material			Carton
	Weight		g	85
Ambient temperature	Storage		°C	-20~60
	Operation		°C	0~50
Temperature setting range	Heating		°C	4-37
	Cooling		°C	4-37
Temperature setting resolution			°C	0.5
Clock				Yes
Regulation function				Proportional band
Features	Item			Heating only
				Heating and cooling
				Comfort function mode (= comfort setpoint)
				Reduced function mode (=night setback setpoint)
				Scheduled function mode(= schedule timer)
				Number of setpoint changes
	Note			12/day
	Item			Holiday function mode
				Off function (with integrated frost protection)
				Setpoint limitation
				Keylock function
				Floor temperature protection
	Note			Only in combination with EKRTETS

2-2 ELECTRICAL SPECIFICATIONS			EKRTR thermostat
Power Supply	Voltage		battery powered 3* AA-LR6 (alkaline)
Connection			Wireless
Maximum distance to receiver	Indoor	m	approx. 30m
	Outdoor	m	approx. 100m

3 Options

Additional information:

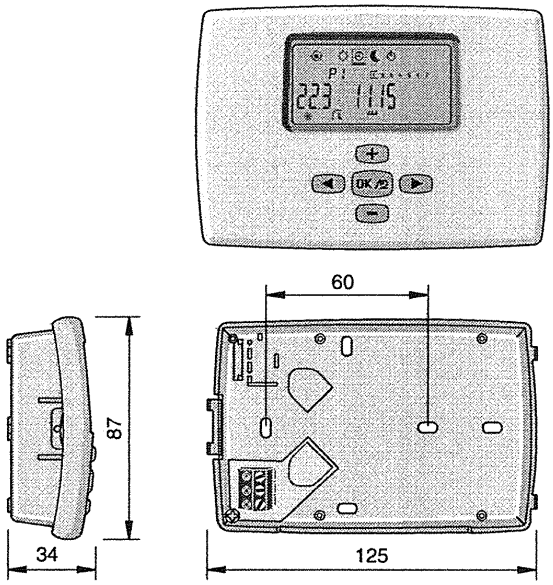
comfort function mode	Use this mode for a fixed temperature on comfort level. (comfort setpoint default on 21°C in heating mode, 24°C in cooling mode)
reduced function mode	Use this mode for a fixed temperature on reduced level. (reduced setpoint default on 17°C in heating mode, 28°C in cooling mode)
scheduled function mode	Use this mode to let your installation be controlled by the schedule timer. The actions programmed in the schedule timer will be executed automatically according to the actual time. This function uses the scheduled temperature setpoint.
holiday function mode	Use this mode to set a fixed temperature during a long absence.
off function	Use this mode to switch of your installation. Integrated frost protection remains activated. (frost protection default on 4°C in heating mode)
setpoint limitation	Use this function to limit the setpoint range for the end customer.
floor temperature protection	Use this function to set a maximum and a minimum floor temperature.

4TW57991-2

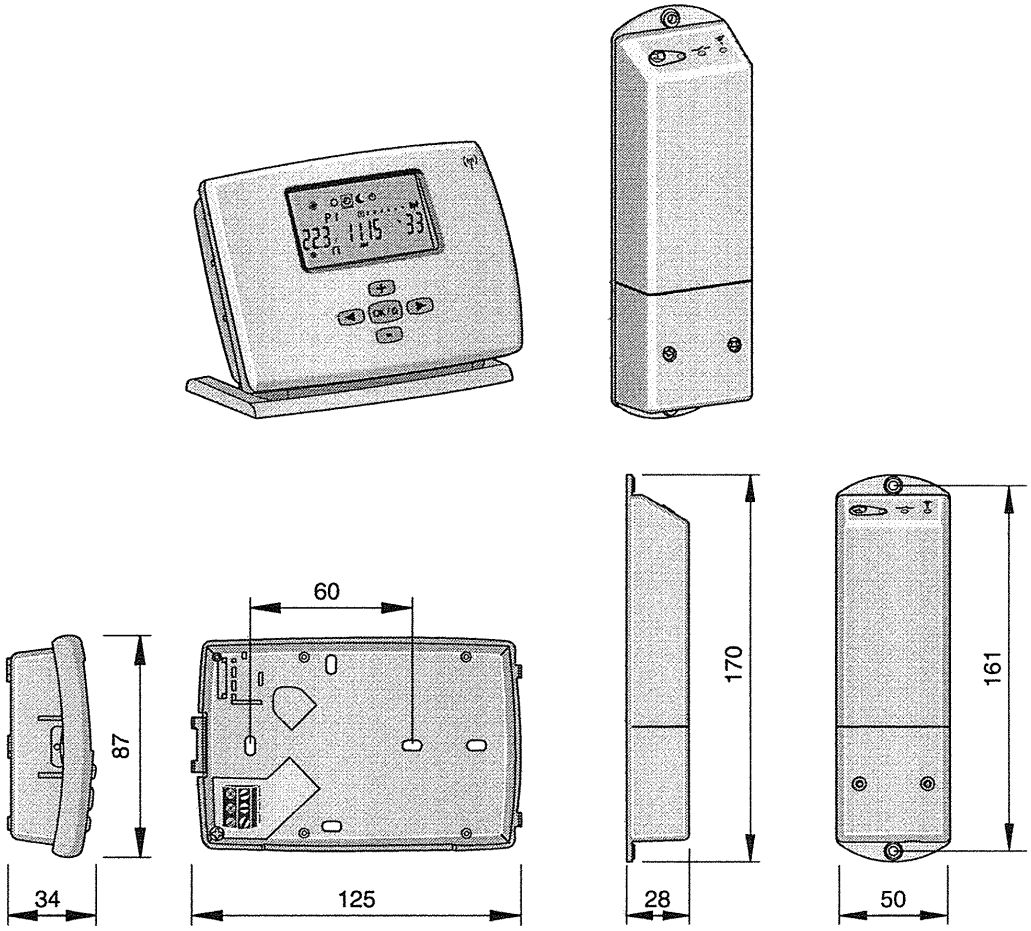
4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

EKRTW



EKRTR



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