EEDEN08-720

technical data

Altherma

R-410A

ERHQ011-016AA

1 Features

- 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	ERHQ011AA	ERHQ014AA	ERHQ016AA
For combination indoor units + outdoor units	Indoor Units			EKHBH016AB	EKHBH016AB	EKHBH016AB	EKHBX016AB	EKHBX016AB	EKHBX016AB
Condition 1	Heating capacity	Nominal	kW	11.2	14.0	16.0	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	2.46	3.17	3.83
	Cooling PI	Nominal	kW				3.79	5.78	6.77
	COP	Nominal		4.55	4.42	4.18	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	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	3.06	3.88	4.66
	Cooling PI	Nominal	kW				3.60	5.29	5.95
	COP	Nominal		3.37	3.38	3.26	3.37	3.38	3.26
	EER	Nominal					2.78	2.36	2.20
For combination indoor units + outdoor units	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	ERHQ011AA	ERHQ014AA	ERHQ016AA
Casing	Colour			Ivory white					
	Material			Painted galvanised steel plate					
Dimensions	Unit	Height	mm	1170	1170	1170	1170	1170	1170
		Width	mm	900	900	900	900	900	900
		Depth	mm	320	320	320	320	320	320
	Packing	Height	mm	1349	1349	1349	1349	1349	1349
		Width	mm	980	980	980	980	980	980
		Depth	mm	420	420	420	420	420	420
Weight	Unit		kg	103	103	103	103	103	103
	Packed Unit		kg	114	114	114	114	114	114
Packing	Material			EPS					
				Carton					
				Wood					
				PP (Straps)					
	Weight		kg	11	11	11	11	11	11
Heat Exchanger	Dimensions	Length	mm	857	857	857	857	857	857
		Nr of Rows		2	2	2	2	2	2
		Fin Pitch	mm	1.4	1.4	1.4	1.4	1.4	1.4
		Nr of Passes		6	6	6	6	6	6
		Face Area	m^2	0.98	0.98	0.98	0.98	0.98	0.98
		Nr of Stages		52	52	52	52	52	52
	Tube type			Hi-XSS(8)					
	Fin	Type		WF fin					
		Treatment		Anti-corrosion treatment (PE)					
Fan	Type			Propeller					
	Quantity			2	2	2	2	2	2
Air Flow Rate (nominal at 230V)	Heating	High	m^3/min	90	90	90	90	90	90
	Cooling	High	m^3/min				96	100	97

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA	ERHQ011AA	ERHQ014AA	ERHQ016AA
Fan	Discharge direction			Horizontal					
	Motor	Quantity		2	2	2	2	2	2
		Model		Brushless DC motor					
		Output	W	70	70	70	70	70	70
Motor	Speed (nominal)	Steps		8	8	8	8	8	8
		Heating	rpm	760	760	760	760	760	760
		Cooling	rpm				800	850	830
Fan	Motor	Output	W	70	70	70	70	70	70
		Drive		Direct drive					
Compressor	Quantity			1	1	1	1	1	1
	Motor	Model		JT100G-VD					
		Type		Hermetically sealed scroll compressor					
		Motor Output	W	2200	2200	2200	2200	2200	2200
		Starting Method		Inverter driven					
		Crankcase Heater	W	33	33	33	33	33	33
Operation Range	Heating	Min	°CWB	-20	-20	-20	-20	-20	-20
		Max	°CWB	35	35	35	35	35	35
	Cooling	Min	°CDB				10	10	10
		Max	°CDB				46	46	46
	Sanitary water	Min	°CDB	-20	-20	-20	-20	-20	-20
		Max	°CDB	43	43	43	43	43	43
Sound Level (nominal)	Heating	Sound Power	dBA				64	64	66
		Sound Pressure	dBA	49	51	53	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	42	42	43
	Cooling	Sound Pressure	dBA				45	45	46
Refrigerant	Type			R-410A					
	Charge		kg	3.7	3.7	3.7	3.7	3.7	3.7
	Control			Expansion valve (electronic type)					
	Nr of Circuits			1	1	1	1	1	1
Refrigerant Oil	Type			Daphne FVC68D					
	Charged Volume		l	1.0	1.0	1.0	1.0	1.0	1.0

2 Specifications

2-2 TECHNICAL SPECIFICATIONS				ERHQ011AA	ERHQ014AA	ERHQ016AA	ERHQ011AA	ERHQ014AA	ERHQ016AA
Piping connections	Liquid (OD)	Quantity		1	1	1	1	1	1
		Type		Flare connection					
		Diameter (OD)	mm	9,52					
	Gas	Quantity		1	1	1	1	1	1
		Type		Flare connection					
		Diameter (OD)	mm	15,9					
	Drain	Quantity		3	3	3	3	3	3
		Type		Hole					
		Diameter (OD)	mm	26	26	26	26	26	26
	Piping Length	Minimum	m	5	5	5	5	5	5
		Maximum	m	75	75	75	75	75	75
		Equivalent	m	95	95	95	95	95	95
		Chargeless	m	30	30	30	30	30	30
	Additional Refrigerant Charge		kg/m	See installation manual outdoor unit 4PW37976-1B					
	Installation height difference	Maximum	m	30	30	30	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	2	2	2
	Item			Installation manual					
	Quantity			1	1	1	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	ERHQ011AA	ERHQ014AA	ERHQ016AA
Power Supply	Name			V3					
	Phase			1~					
	Frequency		Hz	50	50	50	50	50	50
	Voltage		V	230	230	230	230	230	230
	Voltage range	Minimum	V	-10%					
		Maximum	V	+10%					
Current	Maximum running Current	Cooling	A				22.8	27.4	31.9
	Recomended fuses		A	32	32	32	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					

ERHQ011-016AA

MAXIMUM HEATING CAPACITY - PEAK VALUES

	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	3,49	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 VALUE

	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	6,26	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	3,89						
	-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	10,8	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

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%

Conditions

1. Cooling capacity
   Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range D1= 3-8°C
2. Heating capacity
   Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range D1= 3-8°C
3. Power input
   Power input is total input of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006
   Pump power input to be added=90W (according EN14511)

3TW57752-1

ERHQ011-016AA

MAXIMUM COOLING CAPACITY

	Tamb	20		25		30		35		40		45	
	LWE	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

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%

Conditions
1. Cooling capacity
   Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range D1= 3-8°C
2. Heating capacity
   Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range D1= 3-8°C
3. Power input
   Power input is total input of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006
   Pump power input to be added=90W (according EN14511)

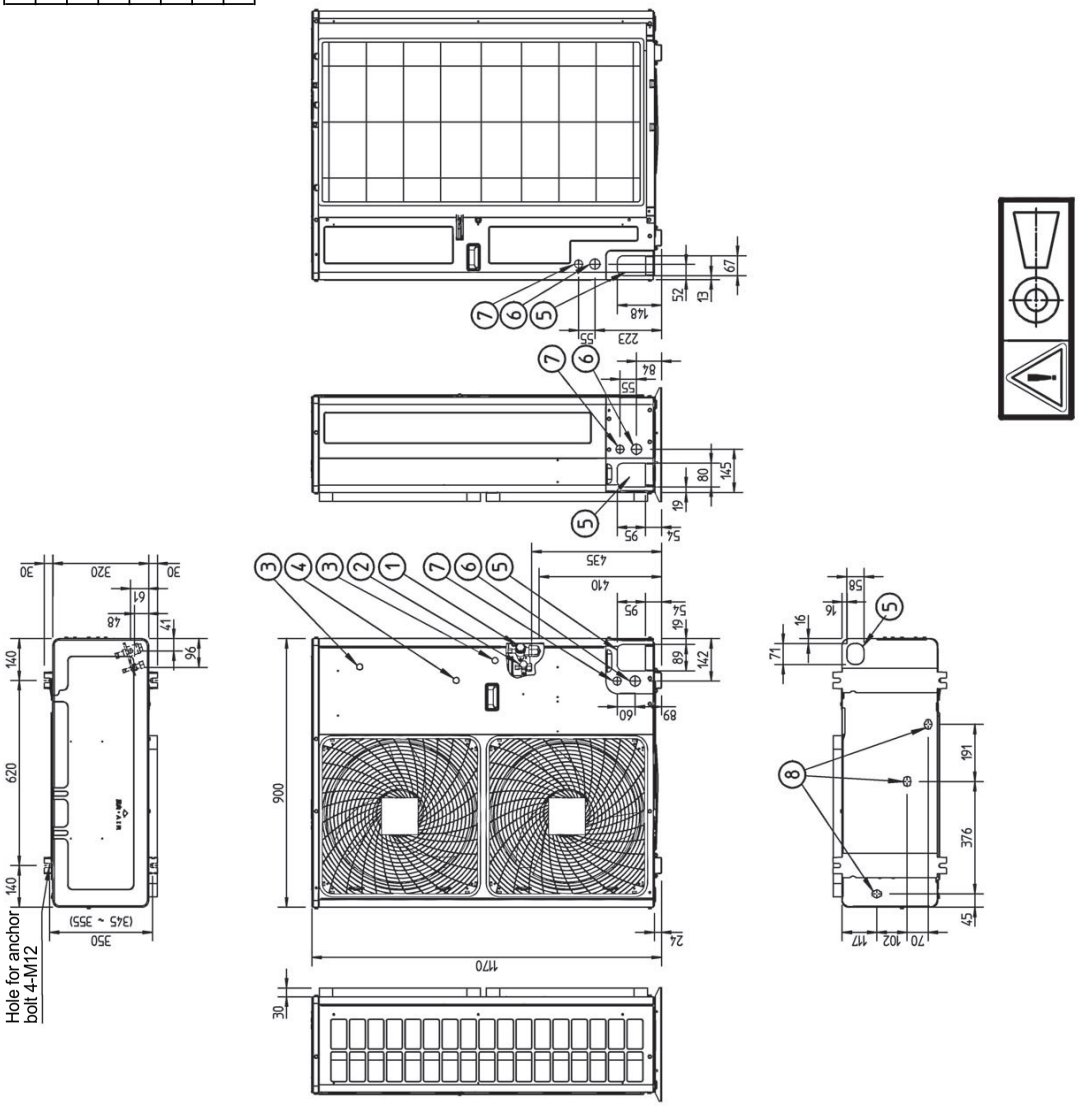
3TW57752-1

4 Dimensional drawing & centre of gravity

4 - 1 Dimensional drawing

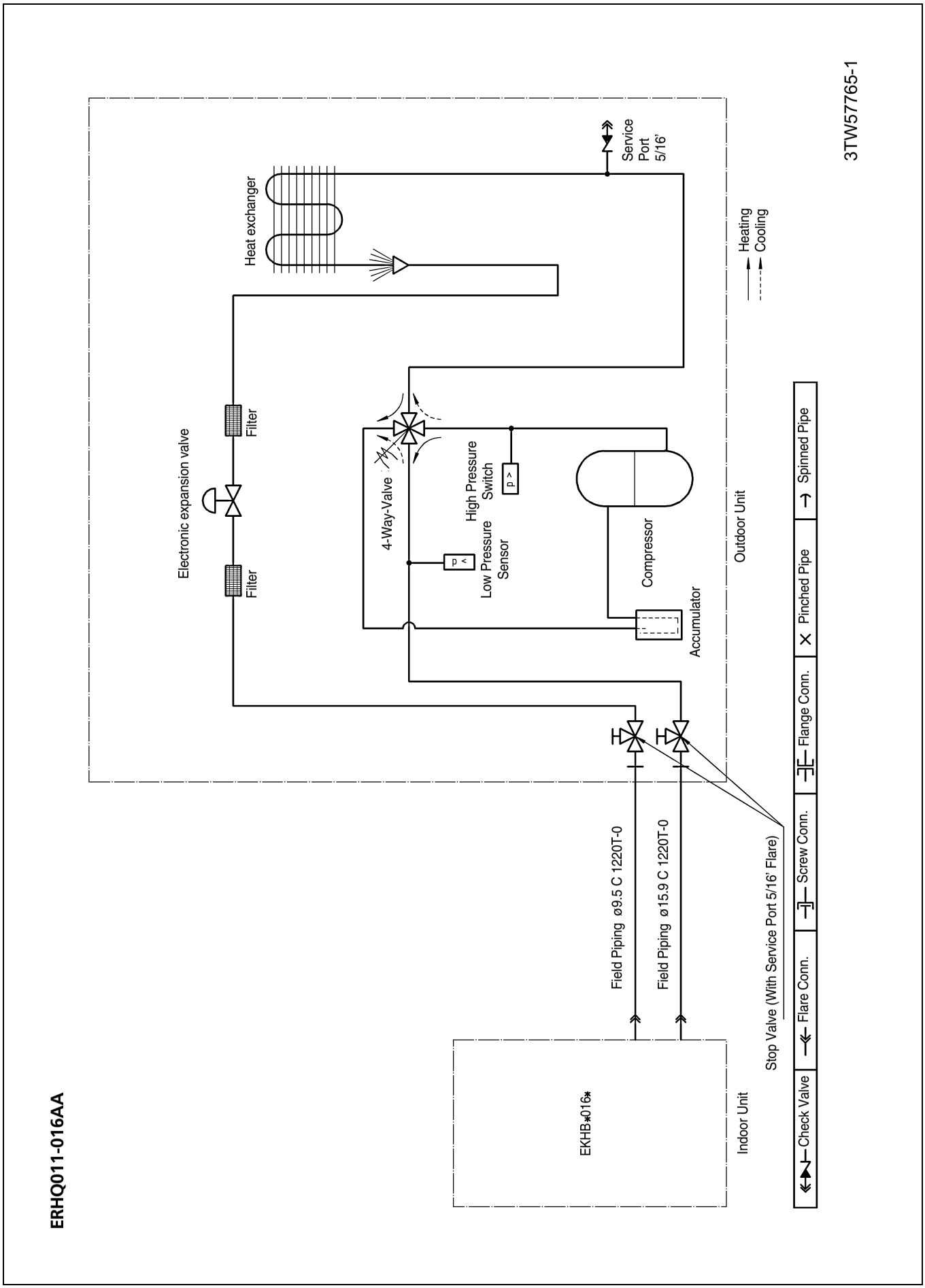
1	Gas pipe connection ∅15.9 flare
2	Liquid pipe connection ∅9.5 flare
3	Service port (in the unit)
4	Grounding terminal M5 (in switch box)
5	Refrigerant piping intake
6	Power supply wiring intake (knock out hole ∅34)
7	control wiring intake (knock out hole ∅27)
8	Drain outlet

3TW57764-1



ERHQ011-016AA

5 Piping diagram

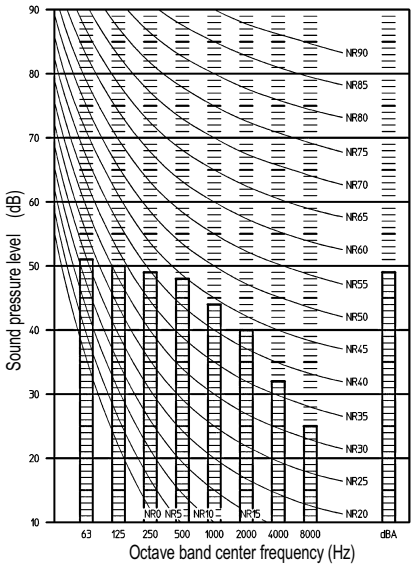


6 Sound data

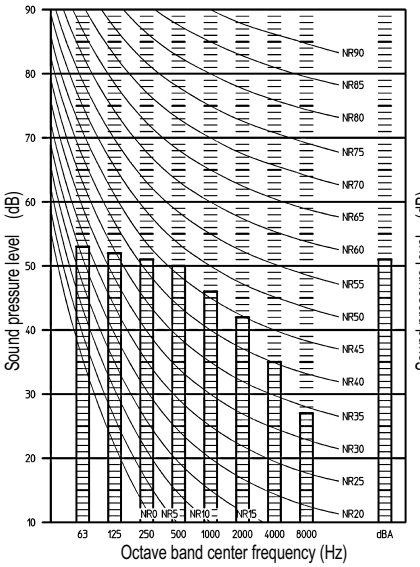
6 - 1 Sound pressure spectrum

ERHQ011-016AA

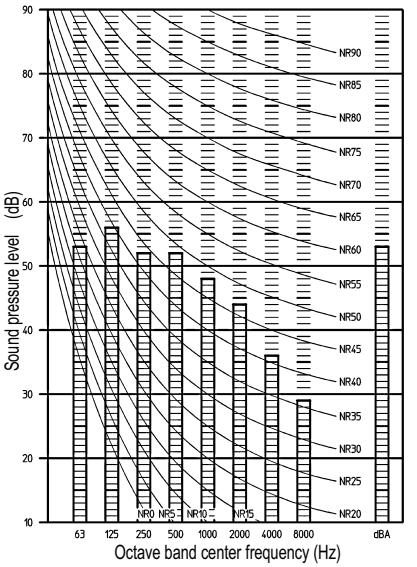
ERHQ011AAV3 HEATING



ERHQ014AAV3 HEATING



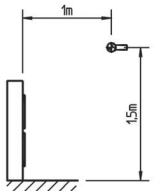
ERHQ016AAV3 HEATING



3TW57767-2A

NOTES

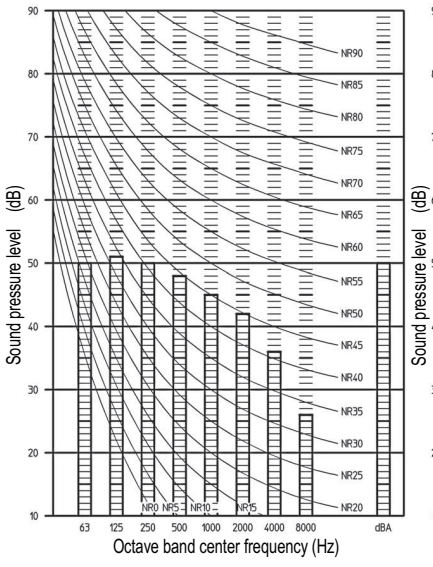
1 Data is valid at free field condition (measured in a semi-anachoic room).
2 dBA = A-Weighted sound pressure level. (A-scale according to IEC)
3 Reference acoustic pressure 0dB = 20μPa.
4 If sound is measured under actual installation conditions, the measured value will be higher due to environmental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



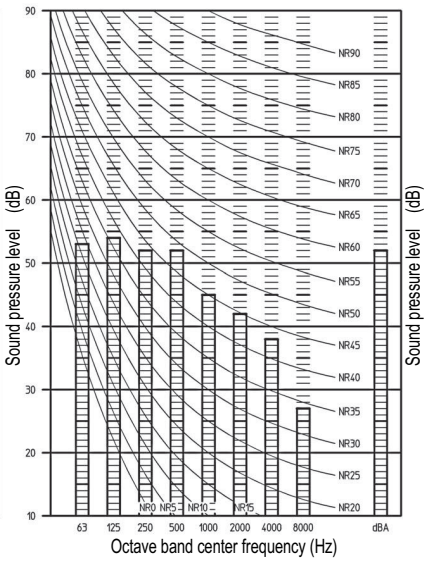
Measuring location (Discharge side)

ERHQ011-016AA

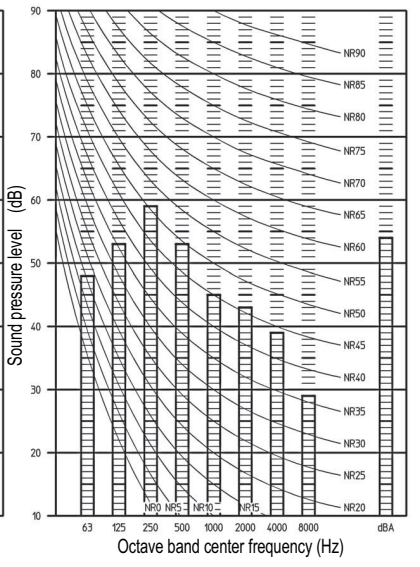
ERHQ011AAV3 COOLING



ERHQ014AAV3 COOLING



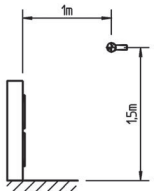
ERHQ016AAV3 COOLING



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.

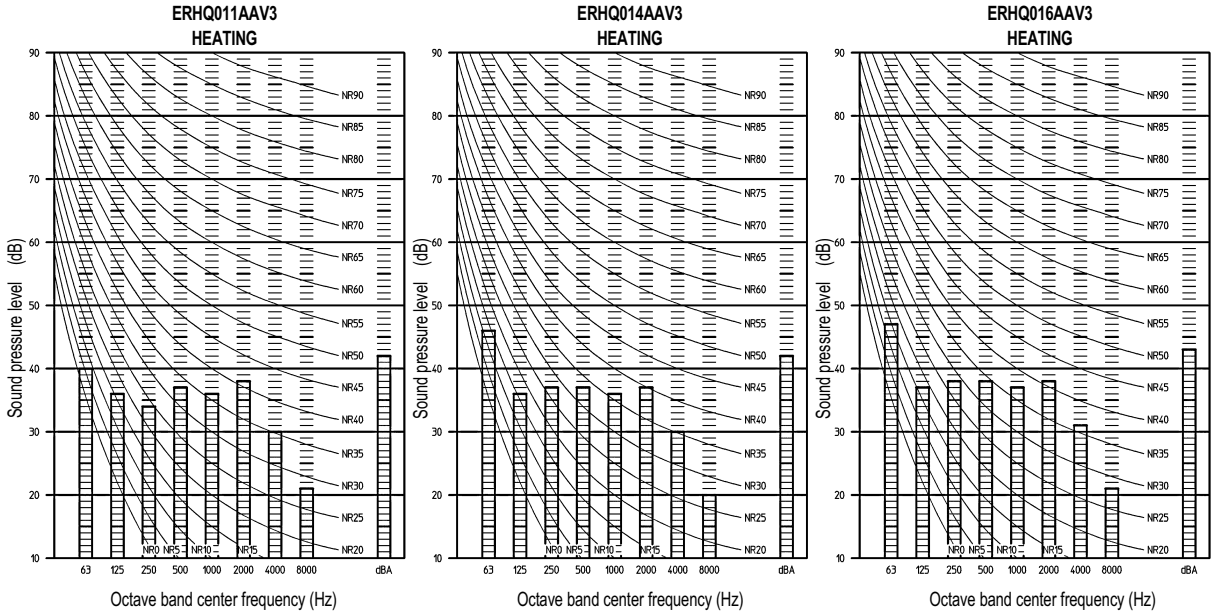


Measuring location (Discharge side)

6 Sound data

6 - 1 Sound pressure spectrum

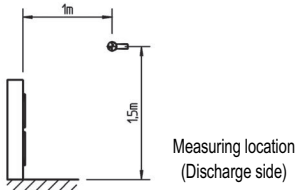
ERHQ011-016AA



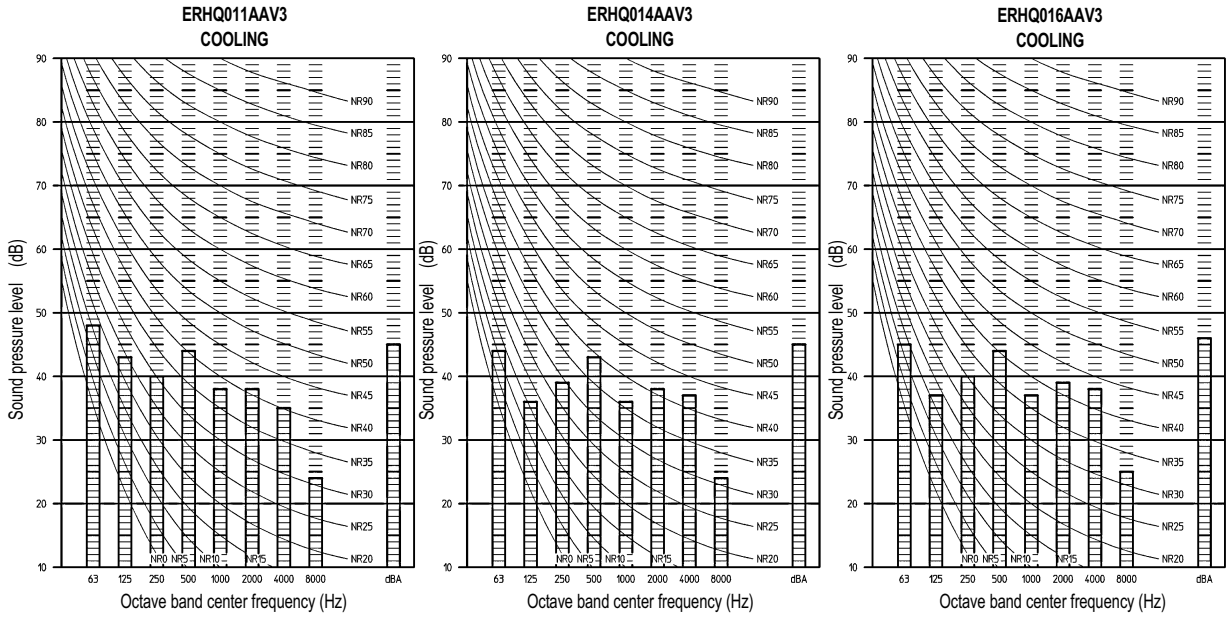
3TW57767-4

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.



ERHQ011-016AA



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.